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THE OZARK BLUFF-DWELLERS

By M. R. HARRINGTON

INTRODUCTION

AS THERE may be considerable delay in the final publication of the results of the recent archeological explorations in certain dry rockshelters of the Ozark mountains, carried on by the Museum of the American Indian, Heye Foundation, this brief preliminary paper is offered with a view of affording some idea of the nature of the work, and of the unusual character of the artifacts found.

In arid or semi-arid regions, such as Utah, it is not extraordinary that prehistoric objects of wood, basketry, or other perishable materials should be preserved in sheltered places; but that such preservation should occur in a humid country like the Ozark region of Arkansas, even in well-protected rockshelters, seems hardly to be credited. Yet our expedition happened to find a district where the rockshelter conditions were exactly right, and the result was an unexpectedly large and varied collection, including many prehistoric articles of wood, basketry, vegetal fiber, skin, and even feathers, in addition to such objects of stone, bone, and shell as are usually found in deposits of the same or of much later periods. The only other similar finds on record from humid regions of the United States have been in certain caves or rockshelters in Kentucky and Tennessee, which yielded many specimens of great interest, but, so far as the writer knows, no collection comparable in quantity and variety with that obtained by our Ozark expedition.

The district covered by the explorations is a small one, in the northwestern corner of Arkansas, where most of the stations investigated lay in Carroll and especially in Benton county, along

the upper valley of White river, the general course of which is eastward and southeastward. A few, however, are on Cowskin or Elk river, in McDonald county, the southwestern corner of Missouri, adjoining at the north. Cowskin river flows westward into Oklahoma, where it joins Grand river, flowing south, a short distance west of which the Ozark hills disappear and the traveler finds himself on the borderland of the Great Plains.

Without attempting, in this brief article, to trace in detail the causes which led to this exploration, it should be stated here that Dr. W. C. Barnard of Seneca, Mo., was the first to call the writer's attention to the possibilities of the region, and that Dr. J. H. Webb of Eureka Springs, Ark., Mr. J. A. Wyrick of Busch, Ark., and Mr. J. A. Truitt of Noel, Mo., rendered valued advice and assistance. Among the many others who helped were Dr. George M. Paxton of Baton Rouge, La., his brother Mr. Charles Paxton of Nail, Newton Co., Ark., and Mr. C. V. Robinson of Rogers, Ark.

When operations were commenced in May 1922, two members of the Museum staff, Messrs D. A. Cadzow, and C. O. Turbyfill assisted the writer. Work was suspended the first of September, the party returning to New York; but it was again resumed early in January 1923, and was concluded about the end of May. On this second trip Mr. Turbyfill, besides the writer, was the only member of the staff accompanying the expedition. However, Messrs William Knox, David Butler, and A. C. Weimer rendered faithful service as field assistants.

On arriving at Eureka Springs, Ark., we found that this part of the Ozarks consists of a kind of rolling plateau, which in places has been so dissected by stream action that it has become really rough, and on a small scale, mountainous. On the steep slopes forming the sides of the rugged gulches, and especially on the faces of the towering bluffs where a ridge juts out into the valley to the very brink of White river, are exposed strata, almost horizontal, but dipping slightly to the west, of such sedimentary rocks as limestone, shale, and sandstone. The topmost stratum, whatever it may have been originally, has become so decomposed until nothing is left but angular flinty gravel, more or less mixed with



PL. I
 A. An Ozark rockshelter.
 B. A coiled basket used for lining a storage pit.
 C. A rockshelter of the "fallen slab" type.
 D. A rockshelter of the "shale-talus" type.

residual soil; this now composes most of the hilltops in the district; then comes a stratum of compact limestone, known to local geologists as the Eureka Ledge. This appears as an escarpment encircling the hills a short distance below their summits, often forming a veritable wall, twenty to forty feet high, in many places difficult or impossible to scale, for which reason it is called the "wall rock" by the country people. Immediately beneath the limestone is a stratum of shale, so much softer than the limestone that in certain situations it has weathered out, leaving the harder limestone overhanging without support. In such cases numerous masses have fallen from the under-side of the limestone ledge, and some of them have rolled down the hillside, with the result that a shed-like rockshelter, with limestone roof and shale floor, has been formed (Pl. IA). This is true especially where high bluffs overlook a river, and at the heads of hollows. In one kind of shelter, which may be called the "fallen slab" type (Pl. IC), although most of the floor may be covered with fallen masses of limestone, there are spaces between the innermost rocks and the cliff wide enough for a camp; and such places usually show abundant signs of ancient habitation by the presence of refuse and ash deposits. Many of these occupied shelters were damp, hence only artifacts of stone and of bone had been preserved; but in a few cases the shelters were entirely dry, so that basketry, textiles, and wooden articles were also found. Fortunately for our studies, the ancient inhabitants were accustomed to dig storage-pits between the rocks and in open spaces of shelters of this kind, where they stored the product of their harvests, and sometimes other materials. These yielded a great part of the collection. In long-occupied shelters of this class projecting corners and edges of rocks were literally polished by contact with the feet, the bodies, and the garments of the ancient dwellers; in some shelters angular markings were seen scratched into the rock, and in one case the figure of a man, rudely painted in red, decorated the back wall.

In the second kind of shelter, which may be called the "shale-talus" type (Pl. ID), most of the rocks that had fallen from the roof had rolled completely out of the shelter and down the hill; in these shelters the refuse of ancient camps was found in the

sloping shale talus, beneath which the storage-pits had been dug into the solid shale beds.

The typical refuse deposit found in all these shelters was an unstratified mass of dust, ashes, fragments of limestone and shale, dried grass, leaves, sticks, pieces of cane, cane basket splints, numerous corn-cobs, acorn and nut-shells, wild-grape stems, bark and Indian hemp in various stages of preparation, fragments of baskets, bits of woven bags and mats, flint chips, the bones of food animals, and sometimes even fish-scales, feathers, deerhair, and scraps of skin and sinew.

It was soon discovered that, so far as the shelters on upper White river were concerned, and with the exception of a few articles found only on or near the actual surface, we were dealing with a single culture, for the character of the specimens was quite uniform throughout the deposits from top to bottom. For this reason, and because the cliffs are locally known as "bluffs," it was decided for convenience to apply the term "Ozark Bluff-dweller" to their ancient inhabitants. When we later moved to Cowskin river in Missouri, however, it was found there that the alien surface objects became more numerous, and in two rock-shelters a distinct stratum containing such articles could be distinguished, lying above the Bluffdweller layer. This new culture will be called, for the present, at least, the "top-layer culture."

BLUFF-DWELLER CULTURE

Beginning our discussion of the "Bluff-dwellers" we find that as sources of food they practised hunting, agriculture, the gathering of natural products, and fishing, named in the apparent order of their importance. Bones of many food animals, almost always split for the marrow, scattered throughout the deposits, tell of hunting. The favorite meats, judging by these, were venison and turkey, although bear, elk, buffalo, and smaller creatures, including turtles, were sometimes taken. With what weapons was this hunting done? The finding of heavy flint points, mainly too large for arrows, and later of wooden foreshafts (Pl. II B), and pieces of cane shafts for spears, together with the wooden atlatl, or spear-thrower, (Pl. III B) for hurling them, shows the use of these imple-



PL. II

- A. Woven bags.
- B. Bone knife and wooden foreshafts for spears
- C. Pack-basket of cane splints.
- D. Baby-carrier woven of cane splints.

ments. It was noted that true arrowpoints were found only on the surface, probably having been left by a different and later people, and that arrows were rare in Bluff-dweller deposits, when found consisting as a rule merely of a cane shaft notched for the bow-string at the butt, and pointed at the anterior end, this point being hardened by fire. Only a single small piece of what may have been a bow was found in any Bluff-dweller deposit, and this is doubtful.

The type of atlatl (Pl. III B), of which one complete and several broken examples were secured, is made of wood, about 19 inches long, with a projection at one end, against which the butt of the spear was rested, and a transverse peg at the other end for grasping, a type differing in detail from all spear-throwers hitherto known, excepting an Aztec type found in the ruins of a temple in the City of Mexico. The average spear- or dart-foreshaft is of wood, about 8 inches long, sometimes ornamented with incised lines. The flint spear-head was fitted into a slot in the anterior end, and bound fast with sinew, or fiber thread, or fiber thread plus pitch, or bark thongs, or rawhide. The posterior end of the foreshaft was usually tapered for insertion into the main shaft of cane. The type of spear-head most characteristic of the Bluff-dweller is the "diamond-shape," with more or less pointed base, but side-notched and stemmed forms frequently occur.

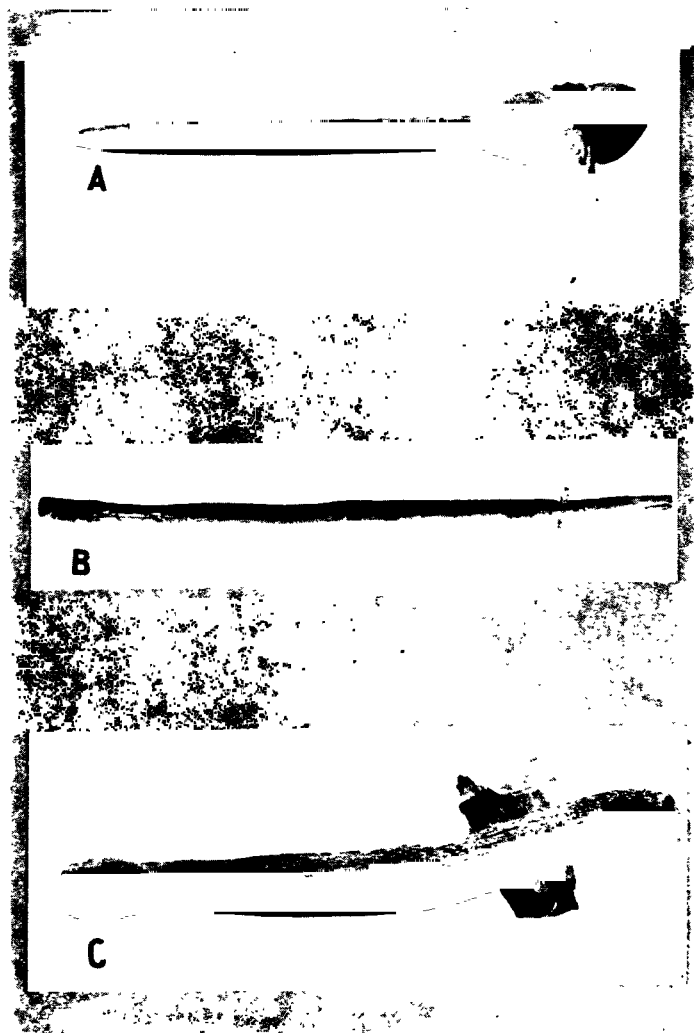
A combined tool and weapon useful in hunting, as well as for other purposes, was the axe or hatchet (Pl. III A). For a long time we wondered what kind of axe the Bluff-dwellers used, as no celts nor grooved axes appeared in the excavations. We considered the occasional large, oval, chipped flint blades occasionally found to be unfinished spear-heads, perhaps, or rejected forms, and it never occurred to us that these were the standard axes of the people until one was found attached to its original wooden handle the tip of the flint blade being thrust through a hole in the haft and tightened with small wooden wedges. Another possible weapon or skinning-tool is a knife-like implement of buffalo or elkbone, about 10 inches long. (Pl. II B).

The collection illustrating Bluff-dweller agriculture is especially rich and varied. The extensive use of corn is shown by numerous small and slender cobs, of husks, and by grains (usually

yellow and red) found loose in pits, or in bags with other seeds. The planting of beans (usually dark in color) is proved by numerous specimens found in bags, and by bean-pods in the refuse deposits. Squash is shown by fragments of shells and one complete dried specimen, also by seeds in bags; sunflowers by parts of the heads, some large, in the refuse, and seeds in bags. In addition to these products, gourds were raised for the manufacture of bottles, cups, and dishes, and several kinds of seeds of plants not yet identified were found in the seedbags with the rest.

The most interesting agricultural implement found was a complete hoe with its perforated mussel-shell blade lashed fast to its wooden handle with bark thongs and native string (Pl. III A), but various digging-sticks—plain sticks about 2 feet long, some nicely rounded and worked, and all showing wear at the ends—also appeared. Some hoe-blades of stone were procured.

The typical method of storing corn, or, at least, one of the methods, was to cache it in a pit in a dry rockshelter. Such pits were often circular, in which cases they averaged about 3 feet in diameter and 2 feet deep; others were oblong in form, about $2\frac{1}{2}$ feet wide and 4 feet long, with a depth of 2 to 3 feet. Many of the older pits were dug into the solid undisturbed stratum of shale, which evidently had been pried out with digging-sticks, deer-antlers, and the like; later ones were dug, partly or wholly, in the refuse left by earlier dwellers. Almost always a three- or four-inch layer of long grass was used as a lining, which often was supplemented with pieces of old woven bags, baskets, or mats (Pl. I B); but sometimes leaves, leafy twigs from trees, pieces of bark, or thin slabs of limestone were used as lining. Among the crops stored in such pits were corn, beans, sunflower seeds, and some of the unknown seeds; for sometimes scattered examples of these had been left in the grass lining. The purpose of the inner lining made of pieces of old bags and baskets, however, was apparently to prevent this loss of loose grains. Seeds for spring planting were kept usually in woven bags (Pls. II A, IV A) or in packages, sometimes a number of species together, the bags being placed in nests of grass under the edges of rocks, or in the pits themselves,



PL. III. A. Hoe with mussel shell blade and original wooden handle and wrappings.
 B. Atlatl or spear-thrower
 C. Axe with chipped flint blade and original wooden handle.

and in one instance a whole warty squash had been allowed to dry on the vine and then stored away for spring use.

The only corn-preparing implements found by the expedition were grinding slabs, or "metates," simple flat stones with shallow depressions, showing use, employed with a flat, oval or rectangular hand-stone, or "mano," to grind corn, and sieve-baskets for sifting the meal. Pieces of flat cane baskets indicate the possible use of the winnowing-basket as well, although of course, these may have served other purposes.

Turning to fishing, we found fragments of several nets, some of fine, others of coarse, mesh, but all neatly made of Indian hemp cords (Pl. IV C). Of course these may have been rabbit-nets, such as were used in parts of the Southwest, but if so, how did the Indians catch the fish whose scales and bones are so numerous in the shelters? The fish-bones have not all been identified, but some catfish remains were recognized, and the present Ozark natives pronounced some of the scales to be those of buffalo fish, and others of "red-horse." No notched pebbles of the sort usually termed net-sinkers were found, but a rough fragment of limestone was unearthed, with natural protuberances which kept an encircling string from slipping off: this may have been used as a sinker.

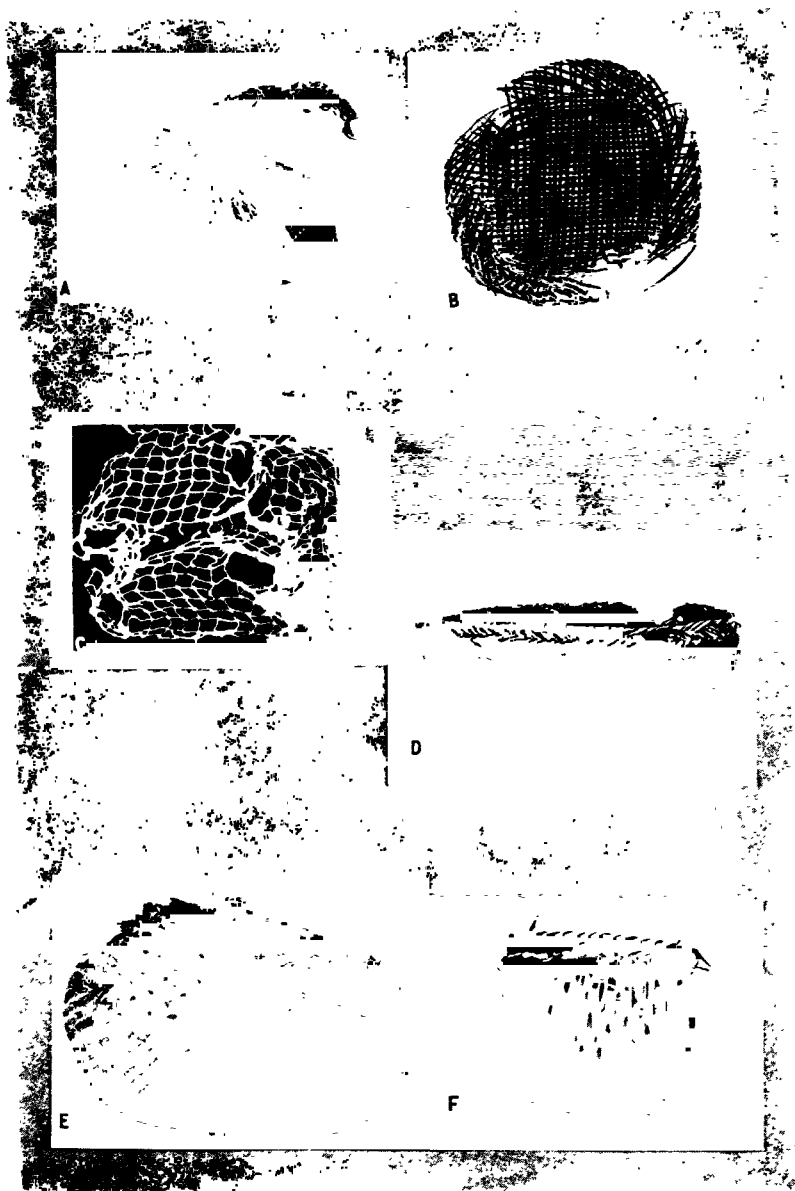
We found no fish-hooks, although a few made of bone are reported from the shelters by local collectors, especially on Cowskin river. These, it is observed, have been found usually in stations where the "top-layer culture" element is large, therefore it is suspected that the bone fish-hook belongs to the "top-layer" rather than to the "Bluff-dweller" series.

Literally bushels of acorn-cups, acorn-shells, the shells and hulls of chinkapins, walnuts, hickory-nuts, and hazelnuts, and masses of wild-grape stems, show how the Bluff-dwellers utilized the natural products of the forest in season; and that they did not disdain the Southwestern desert habit of gathering wild seeds is shown by the finding of species in the pits which did *not* appear in the carefully cached collections of spring seeds for planting. One woven bag filled with acorns (Pl. IV E) packed in grass was found in a pit.

Turning from the foods to the clothing of these people, we found no head-gear, although two woven caps have been reported one from White, the other from Cowskin river; but robes of several classes were uncovered. One was made of a large deerskin with the hair on, sometimes of two such deerskins stitched together; but feather robes were almost as common. A long fiber cord was first made, then wound with downy feathers until the result was a fluffy rope, like marabou, only not so thick. This formed the warp of the robe. The weft was composed of fiber or deerskin cords, without feathers, twined in pairs, the rows of twining being perhaps an inch or two apart. This made a warm, light, strong robe. In a few robes, of which fragments were found, strips of furry skin, possibly rabbit-skin, had been wound around the foundation cords in place of feathers. Pieces of what seem to have been woven fiber robes without the addition of feathers or fur were also found. The deerskin robe, at least, was sometimes belted about the person with a fur girdle, the ends of which were perforated and provided with tying-thongs. Only one breechcloth was found in place on a desiccated body, this was a bunch of long grass knotted at one end. First, apparently, a fiber cord had been wrapped around the waist five or six times to serve as a belt; then the knot in the bunch of grass had been slipped under this belt in the back, and then the loose grass was brought forward between the legs and the ends tucked under the belt in front.

One semi-mummified human body was found still wearing tanned deerskin leggings and moccasins; the leggings were of a wrapped type, suggesting those worn by some Pueblo women today, and were attached to the moccasins, which, although patched almost beyond recognition, were soft-soled, and seem to have been originally puckered in front to an instep piece, somewhat like the present northeastern Algonkian type, yet differing from anything now used. Small fragments of deerskin moccasins were quite common.

In bad weather, thick, clumsy overshoes woven of grass were worn, perhaps over the deerskin moccasins; fragments of these were fairly common, and one, still caked with the mud of some forgotten Ozark winter, was nearly perfect. It had a bunch of



- Pl. IV
- A. Bag, woven of grass, containing seeds.
 - B. Basket tray of wickerwork.
 - C. Fragment of a fish-net.
 - D. Basket woven of cane splints.
 - E. Woven bag containing acorns.
 - F. Small basket woven of cane splints.

loose grass for an insole, matted and flattened by use. Sandals also were much used, probably in warm weather, woven of some tough native grass. One of these, found entire, tie-strings and all, exhibits a double weave, presenting one kind of weaving to the ground, another to the foot of the wearer. Ornaments were not abundant; but a few bundles of feathers tied with string may have been kept as adornment for the hair; and white, yellow and red mineral paints were found. The only pendants are those of mussel-shell, triangular in shape, with a perforation near the apex. One shows a neat, engraved, angular, geometric pattern. The beads most abundantly used were made from small round seeds, of which hundreds appeared with one skeleton. Some tiny seed beads, with their original fiber strings, are snow-white, and at first were mistaken for shell. A number of large beads were really made of shell, from the columella or core of some species of conch found no nearer than the Gulf of Mexico—the only objects discovered indicating direct trade or communication with distant regions. Fans were made of feathers, strung together with fiber cords or strips of quill.

Turning to the utensils and implements not hitherto discussed, we find the basketry among the most interesting. Thanks to the Bluff-dweller habit of lining storage-pits with old baskets (especially pieces of them), many specimens were gathered, constructed chiefly of thin splints peeled from the rind of the wild cane, and made usually in twilled, but sometimes in plain checker, weave. A few have intricate patterns woven in, similar to those still seen among the Chitimacha Indians of Louisiana, for example. Black and red dyes were occasionally but not commonly used. The borders are often intricate and ingenious. A type of coarse basketry was made from the split canes from which the splints of rind for making the fine baskets had been peeled, and occasionally narrow wooden splints—split shoots resembling willow—took the place of cane splints.

Four principal types of cane baskets were collected—one a flat, dish-like form, another similar but with an open weave at the bottom for use as a meal sieve; then there is the deep basket which varies in size from a tiny specimen (Pl. IV F) holding about a

cupful, to large pack-baskets with a capacity of a bushel or more (Pl. II C). A fourth style is oblong in shape, with a diagonal twilled weave (Pl. IV D).

Made of basketry, but still hardly a basket, is the typical cradle-board, or baby-carrier, of this people, of which one nearly complete and two fragmentary specimens, were found. This was made by bending a cane to form a kind of truncated, triangular figure of suitable size (about $2\frac{1}{2}$ ft. long), and tying the ends together; this was then covered on both sides with a webbing of split cane, made in the open cross-warp weave, like a chair seat. Near the larger end two little arms in the same weave were made to support the hood, intended to shade and protect the infant's face. This hood was made also of basketry, but in the more ordinary twilled weave, and is not shown in our illustration (Pl. II D). On this cradle were found a few bones of a very young infant, imbedded in the dragged small feathers and vegetal down which had composed its bed. The cords used in binding the baby to its cradle were attached to the cross-sticks seen in the picture, but were so badly cut by rats that they could not be preserved in place. In point of numbers, coiled basketry came next to the twilled and checker weave made of cane. These coiled baskets were all bowl-shaped and sometimes large, but without decoration of any kind. One complete example was found. (Pl. I B). The foundation is made of slender wooden rods resembling willow-shoots, while the stitching seems to be of bark thongs. Still another type of basketry was woven of split shoots resembling willow, in the form of oval trays, and suggesting a type of wicker baskets still seen in certain Southwestern pueblos (Pl. IV B). At first we were inclined to attribute the cane twilled, coiled, and wicker types of basketry to different peoples, but when we found examples of all of them used to form the lining of the same storage-pit, we decided that all these forms were made by the same people at the same time.

Of basketry also is a type of water-bottle lined with pitch on the inside; of this we found only a fragment, but it is noticeable that the weave resembles the twined weave of the present Paiute water-bottles rather than the coiled type of the Apache, for example. Perhaps for carrying water were bucket-shape vessels

of bark (of a species not yet identified), shaped and sewed somewhat like the birchbark "nagon" familiar as a modern Indian maple-sugar receptacle in the Great Lakes region. Of these, one small specimen was recovered nearly entire. Gourds were probably used largely as water-bottles, although no perfect examples were found, and were also employed extensively for cups, bowls, and dishes of different kinds. When cracked they were repaired by stitching with fine fiber thread, and sometimes were provided with fiber-string handles.

The finding of a piece of a woven bag with pitch on the inside suggests that these too may have been used sometimes as water-bottles; and woven bags without the pitch served many other domestic purposes (Pl. II, A, Pl. IV A, E). Although materials range from grass to bark fiber and wild hemp, or combinations of these, with one exception the technique is the simple twined weave seen in the plainest of the woven bags still made by the central and northern Algonkian and the southern Siouan tribes. These are rectangular and flat, as are most of the ancient bags; but some of the latter are long and wallet-like, others of cylindrical form. The sole exception to the twined type of weaving is a coil without foundation, or netted coil fabric, suggestive of the Southwest. It may truthfully be said that, with this exception, all of the true textiles found (excluding basketry), are of the twined type. The bags were evidently used for the storage of seeds, medicines, and miscellaneous effects. Most of them are fragmentary or have been badly damaged by rats, but a few entire examples were recovered. Some had been damaged in Bluff-dweller days, and had been repaired with pieces of deerskin neatly stitched to the fabric (Pl. II A). In capacity the bags ranged from perhaps a pint of seeds to about a bushel. Among the artifacts most commonly found were pieces of native cordage, ranging from thread to rope and illustrating the use of Indian hemp, grass, and various bark-fibers, especially cedar. With these objects should be included thongs of leatherwood and perhaps of other barks, and of rawhide and dressed deerskin. Some of the cordage is braided, but most is twisted like the usual modern string and rope.

The use of gourd dishes has been mentioned. In addition it was found that very large mussel-shells were prepared for use as receptacles by grinding off the hinge and the rough, dark-colored exterior. Smaller mussel-shells seem to have been often adapted by a little grinding for use as spoons, but no trace of either wooden bowls or wooden spoons was discovered. The carapace of the "land turtle" seems to have been quite generally used as a bowl also, sometimes with little elaboration, again with all the interior bony processes ground off and the whole shell carefully smoothed and polished.

During the early part of the explorations it was believed that the Bluff-dwellers had used no pottery, for some long-inhabited shelters yielded little or none of it, and the few fragments found appeared on or near the surface; but from the occasional association of typical Bluff-dweller spearpoints, and the like, with a certain class of pottery, it was finally decided that they used such ware, probably taking it up toward the end of their stay. By observing the class of pottery associated with their remains, we were ultimately able to determine that it was sand- or crushed stone-tempered or more rarely, shell-tempered, undecorated, usually dark in color, frequently quite thick and hard, and that the vessels were frequently flat-bottomed; in fact, the ware suggests somewhat the coarser variety of pottery seen in the Caddo region of southwestern Arkansas, but lacks its decoration. We learned also that some of the pottery found on the surface—a shell-tempered, decorated variety - had been left by a different and later people. This will be described more fully later, in connection with a discussion of the "Upper-layer Culture."

Among miscellaneous domestic implements may be mentioned tough pebbles showing use as chipping hammers, rude flint scrapers, bone awls of varying sizes and shapes, cylinders of antler used perhaps in chipping flint, a "digging-stick" of antler, awls of cane and of wood, and large needles of cane used probably in making rush mats, a few fragments of which appeared.

Only two articles were found possibly pertaining to the ceremonial life of the Bluff-dwellers— one a stick carved in a peculiar way and painted white, to which no practical use can be assigned;

the other, the remains of a "medicine-bag," or sacred bundle, found where a burial had evidently lain. This consisted of a woven bag of Indian hemp, containing articles used probably as charms, including two beaver-teeth (one wrapped with deerskin at the base), the beak of a bird, other bird bones, some worked pieces of calcite, and the like. No pipes were found, but two of tubular form have been obtained in the region by local collectors, one of these in Jacobs cavern near Pineville, Missouri, which has yielded typical Bluff-dweller stonework. This pipe is engraved with fine zigzag lines.

The typical manner of burying the dead practised by the Bluff-dwellers was to dig a hole, much like a storage-pit, between the rocks of the shelter or between the fallen rocks and the back wall; this hole was lined with grass, on which was spread a deerskin robe with the hair on, a feather robe, or both, or sometimes a plain fiber robe; then the corpse was laid on its side on this bed, with knees drawn up and arms flexed. A covering of pieces of old bags, mats, or grass was sometimes laid over the body; next came a layer of poles and sticks, preferably of cedar; then dust, ashes, and small rock fragments, and finally, in some cases, large pieces of rock. Double and triple burials were made at times, and occasionally burials of cremated remains. In very dry spots the remains were mummy-like, much of dried skin and tissue being preserved, with portions of clothing, but often cave rats had picked some of the bones clean, or had even eaten many of them outright. In damp situations only bones remained, of course.

Variations in this mode of burial were observed, especially in the case of children. The rat-gnawed bones of an infant were found amidst the draggled feathers and vegetal down of its bed on its cradle-board woven of cane; another had been wrapped in shredded bark and laid on some pieces of old baskets, then covered with its cradle (although this had been outgrown at the time of the child's death), and the hole filled with dust and limestone slabs. A third infant had been wrapped with long grass, tied into a bundle with pliable willow-like shoots, and a fourth had been placed in a large woven bag and packed with grass—then the grass had been set on fire. No attempt had been made to orient the

bodies, the only uniformity being that all were flexed and lying on their sides, except the baby on the cradle-board. The skeletal material has not yet been studied, but the impression gained as the burials were uncovered was that of a heavily-built, sturdy people of medium height. One skull, that of the infant wrapped in grass, shows an artificially flattened frontal; and we heard of two similar cases found by local collectors: one in a rockshelter near Noel, Mo., the other in an open-air cemetery far down White river, between Branson, Mo., and Cotter, Ark.

Attempting to work out the relationship of the Ozark Bluff-dwellers by comparing their products with those of Indian tribes known today, we find the following resemblances:

To Muskogean and surrounding tribes:

- Cane basketry
- Feather fans
- Large shell beads made from conch-cores

To ancient Caddos:

- Types of spear-heads
- Tempering and form of pottery

To Central Algonkians and Southern Siouans:

- Most woven bags

To Northern and Northeastern Algonkians:

- Bark buckets
- Moccasins

To Southwestern tribes:

- Sandals
- Coiled basketry
- Coiled netted bag
- Wicker baskets, Pueblo style
- Atlatl or spear-thrower (an Aztec type)
- Spears with foreshafts
- Metate, and mano or hand-stone
- Wrapped-warp feather robes
- Basketry water-bottle lined with pitch
- Wrapped leggings
- Tubular pipes (probably)

It will be seen that of the nineteen characteristics recorded as typical of the Bluff-dwellers, eleven point toward the Southwest and eight in various other directions, which might be taken to indicate that this people originated in what is now Arizona, New Mexico,

or even Old Mexico. We must not place too much reliance on this form of testimony, however, for it is probable that in Bluff-dweller days some of these characteristics were distributed over a much greater area than has been hitherto realized. For example, Mr. Wm. E. Myer, of the Smithsonian Institution, informs the writer that he has secured a fragment of a wrapped-warp feather robe from a rockshelter as far east as the Kentucky-Tennessee mountain region, and Cushing found the atlatl (although of different type) as far east as Key Marco, Florida; besides which, it is more than possible that the large projectile points found on certain early sites on the Atlantic Coast (in New Jersey, for example)—points too large to give satisfactory service as arrowheads—were in reality used with atlatl darts. There is some evidence also that coiled basketry was once quite widely distributed through the East.

It is most interesting to note that the only record of other atlatls exactly like the Bluff-dweller type (Pl. III B) pertains to those found in the ruins of the Aztec temple of Huitzilopochtli and Tlaloc in Mexico City.¹

There are several reasons why we considered our Bluff-dweller deposits to be not only pre-Colonial, but really of considerable antiquity; but to begin with, we must disclaim any attempt to determine the exact, or even the approximate, number of years. It is true that in some shelters the Bluff-dweller refuse reached to the very surface, but in other places, where the deposits have not been exposed to the trampling of cattle and to similar agencies, sometimes a foot or more of small rock scales and fragments had accumulated on top, and in some cases three or four feet of shale talus, and in still others slabs weighing tons, had fallen upon the ashes and refuse.

Not an article was found suggesting any European influence in these Bluff-dweller deposits—they were plainly pre-Colonial. But they were more than that: in two shelters on Cowskin river the remains of another and later culture lay above them, which also, by the same criterion, was pre-Colonial. In themselves, in

¹ Manuel Gamio. Vestigios del Templo Mayor de Tenoxtitlán descubiertos recientemente, *Ethnos*, t. I, núm. 8 a 12, Mexico, Nov. 1920 á Mzo. 1921.

many cases, the objects gave an impression of great age, as for instance, the axē (Pl. III C) with its rude, oval, chipped flint blade and stout oak handle, and this was the only type of axe found. No grooved axes were present, nor even fragments of them, and the single celt obtained was so near the surface that it undoubtedly belonged to the later "top-layer" people. Most known pre-historic peoples of North America, except in the far Northwest and on the Pacific coast, used either the celt type of stone axe or the grooved axe, or both, having progressed beyond the chipped-axe stage, so suggestive of paleolithic Europe. Another thing suggesting age is the atlatl, or spear-thrower, with its darts, which, although known to have existed in Utah and the vicinity in pre-Cliffdweller days, apparently remained only among the Eskimo in the north, and the Aztecs and other tribes in the south, when America was discovered, the bow and arrow having completely taken the place of the less efficient weapon in what is now the United States. This question of the age of the Bluff-dweller remains should be further studied before any definite conclusions are reached. The writer thinks, however, that they may prove at least as old as the pre-Cliffdweller Basket-maker people of Utah, whose culture shows a similar, but somewhat higher, stage of advancement.

Among our miscellaneous discoveries was the fact that the Bluff-dwellers did not live entirely in rockshelters, for at least two sites were located— one on the banks of Cowskin river below Noel, and one on White river near Beaver, where the series of stone artifacts was typical, and there being no rockshelters near, the people must have occupied tents or buildings of some sort. However, while spear-heads of Bluff-dweller types are quite common all along the rivers of their ancient territory, village-sites showing a complete series of their characteristic stone implements are rare.

In a series of explorations to determine the geographical distribution of Bluff-dweller culture, we examined a rockshelter on Kings river, and made a few tests in others near Nail, in Newton county, Arkansas, in both of which regions we found distinct evidences of typical Bluff-dwellers; but near the junction of White and Buffalo rivers, somewhat farther east, few traces of this people

were seen. This is probably near their eastern boundary. We can therefore say with some degree of probability that the Ozark Bluff-dwellers occupied a territory reaching from the edge of the Oklahoma prairies eastward at least to about the mouth of Buffalo river, a distance of some 175 miles. The writer has information leading him to look for their extension toward the south at least as far as Arkansas river, while some of Fowke's finds in central Missouri are distinctly Bluff-dweller in appearance. Probably their territory was roughly 175 or 200 miles in each direction.

TOP-LAYER CULTURE

It has already been mentioned that during our work in the rockshelters on White river in Benton and Carroll counties, Arkansas, we noticed that there occasionally appeared, near the surface of the deposits, articles of a kind never present in the lower levels. These were, first of all, tiny arrowpoints of flinty materials, and secondly, grooved maul-heads of stone, while a single pecked and ground celt was also found. At first we thought that all the pottery belonged to the same category, but this judgment we were later able to revise, as we discovered that *shell-tempered* pottery only appeared at the surface, and sand-tempered as well as shell-tempered, occasionally at deeper levels.

When work on Cowskin river and its tributaries in southwestern Missouri was commenced, we found this surface material much more abundant, and in two cases distinct layers were found in rockshelters superposed on typical Bluff-dweller deposits. From the contents of these layers we were able to identify the articles mentioned, found near the surface in the White river stations, as belonging to a culture distinct from that of the Bluff-dwellers, and were able to add certain objects to the series of articles typical of it. These were neatly made "spoon-shape" or "duck-bill" scrapers, usually of curved form, the unchipped side being concave; double-pointed flint knives with sharply beveled edges; and grooved arrow-shaft smoothers of sandstone. We also learned more about the pottery: that the top-layer variety was not only shell-tempered, but that the vessels were of globular form with flaring rims, were decorated with angular incised designs, and were provided with flat, strap-like handles.

At the Elk Springs rockshelter we found in one place fragments of certain coarse, sand-tempered, undecorated vessels that were often flat-bottomed, a class associated with the Bluff-dweller deposits, while directly above, in a distinct surface layer, appeared the typical top-layer shell-tempered pottery. We also noted that stone mortars with cup-like grinding cavities (not metates), and circular flat stones evidently used for both grinding and hammering, were associated with this top layer; also that the people seem to have used a great deal more deerskin than did their predecessors, for the scraps were much more numerous. That they killed more game in a given time is indicated by the fact that bones of food animals were much more numerous in the top layer in proportion to the bulk of the deposit. It was noticeable also that the bones of large animals, such as elk and buffalo, were more numerous in proportion here than in the older deposits. The bow and arrow of the "top-layer" people were evidently more efficient than the darts and spear-throwers of the Bluff-dwellers.

Fiber strings were about the same in both layers, but we have not yet been able to identify any particular sort of basketry or weaving as "top-layer," unless it be a type of coiled basket made on a foundation of grass, instead of wooden rods, such as the Bluff-dwellers used. Corn-cobs from the top layer averaged considerably longer than those of the Bluff-dwellers. One piece of a large, strong bow was found in the "top-layer."

Several months after the conclusion of the Ozark work, the writer happened to visit the Nemaha settlement of the Iowa Indians near Whitecloud, in the northeast corner of Kansas; and while there met Mr. Edward Park, a local archeologist, who, in kindly exhibiting his collection, remarked that he had found traces of three distinct Indian cultures in that vicinity, one of which, seen at two sites only, was characterized by a series of objects *identical* with those the writer had found to be typical of the "top-layer culture" in the Ozark rockshelters, plus disc-pipes and small L-shape pipes of catlinite, or other red stone, and a few axes with wide, shallow grooves. Mr. Park regards this culture as the latest of the three, because the skeletal remains associated with this series of artifacts are the best preserved. The resem-

blance between the "top-layer" culture of the Ozark rockshelters and Mr. Park's "latest culture" can best be expressed by the following table

	<i>Ozark "Top-layer"</i>	<i>N. E. Kansas "Latest"</i>
Arrowpoints	Very small, often triangular.	Very small, usually triangular.
Knives	Double-pointed, beveled.	Double-pointed, beveled.
Scrapers	"Duck-bill" or "spoon shape."	"Duck-bill" or "spoon shape."
Axes	Celt.	Celt.
		Axe with wide, shallow groove.
Hammer-grinders	Flat, circular.	Flat, circular.
Mortars	Cup-shape cavity.	Cup-shape cavity.
Pottery	Shell-tempered, globular form, flaring rim, angular incised decoration.	Shell-tempered, globular form, flaring rim, angular incised decoration.
Pipes	Small L-shape catlinite pipes have been found near our Ozark rockshelters.	Disc-type, also L-shape, all small, of catlinite and red sandstone.
Shaft-smoothers	Sandstone, grooved.	Sandstone, grooved.

Mr. Park's discoveries are valuable in two ways in bearing on this discussion of the top-layer culture of the Ozark rockshelters: first, because he has added the disc-pipes to the series; second, because he has increased our knowledge of the distribution of this ancient people.

The writer has a theory that the "top-layer" people of the shelters and the "later" people of northeastern Kansas were Siouan, perhaps Kansa or Osage (who are closely related), this view being based on the following arguments:

In the western Ozark rockshelters the "top-layer" culture is that of a people who were apparently the last to occupy the region. Now the Osage were found by the first whites in possession of this district, and therefore were the last representatives of an aboriginal culture; hence the Osage and the "top-layer culture" should be identical.

This argument would be conclusive if it were not for the fact that, while the "top-layer" culture is the latest in the rockshelters, it may not have been the latest in the district. The Osage may

have come in after the "top-layer" people had vanished, and claimed the region without occupying the shelters.

We have additional reasons, however, for believing the "top-layer" culture to be Osage, or at least, Siouan. Mr. Park's work has shown the disc-pipe to be connected with this culture. Now the disc-pipe has been found in undoubted old Osage and Kansa war-bundles; and its distribution in Wisconsin corresponds with the ancient territory of the Winnebago. So we have considerable justification for believing it to be a Siouan form. We may argue that if the disc-pipe is Siouan, and the disc-pipe is connected with the "top-layer" culture, then the "top-layer" culture is Siouan. But of course it is possible that other tribes, as well as those of Siouan origin, used the disc-pipe; hence this argument is not conclusive.

Another argument helping to identify the culture as Siouan lies in the use of the circular, flat, combined hammer-and grinding-stone. We know it to be typical of our "top-layer" culture; also we know it to be *still in use* by the Osage, Kansa, Iowa, and Oto, all Siouan people. This, of course, is not conclusive either, but serves to strengthen the theory.

It will be seen from the above that there are several reasons for believing our "top-layer" culture to be Siouan, perhaps Osage or Kansa; and the writer at present knows of no argument indicating the contrary. He would be glad to hear from students of the subject who may be able to furnish additional data.

Mr. Park thinks, however, that we have historical reasons for believing that the Osage never lived in northeastern Kansas, but farther east. We do know, nevertheless, that the Kansa did occupy that region at one time. The Kansa and the Osage are so nearly alike in culture that it may be quite possible the Osage left our "top-layer" culture specimens, and the Kansa, Mr. Park's "latest culture" objects, although the specimens from the two places are practically identical.

We were told of one or two village-sites on the Cowskin river bottoms near Noel, Missouri, yielding "top-layer" projectile points and scrapers, but were never able to visit them.

TRACES OF OTHER CULTURES

On the bottom lands along both Cowskin and White rivers we found occasional sites, the specimens from which did not fit in with either our Bluffdweller or our "top-layer" cultures. Grooved axes of ordinary type were characteristic of these sites, and projectile points of various forms, rather lacking in character. We were unable to enter into a further study of this culture to determine its relationships.

The possibility of the existence of a very ancient culture, perhaps even older than that of the Bluffdwellers, is suggested by the discovery, lying on the surface of the gravels constituting the bed of Clifty creek, in Carroll and Benton counties, of a number of artificially shaped flints, all more or less water-worn. Some might have been merely the rejects of the comparatively modern Indian flint-chipper, but others resembled completed implements of crude and early types suggesting certain European paleolithic forms. An implement of the latter type was picked up also in the bed of Spider Creek, near Busch, Carroll county. Such objects are interesting and suggestive, but unfortunately prove little unless found *in situ* in deposits whose antiquity can be demonstrated.

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RACE TYPES IN POLYNESIA¹

By LOUIS R. SULLIVAN

THE now rapidly accumulating data on the biology of the inhabitants of Polynesia are beginning to indicate clearly that the "Polynesians" are in no sense to be considered a uniform racial type. The "Polynesian type" is an abstract concept into the composition of which have entered the characteristics of several physical types. It is roughly comparable to an "American type," defined by the average characteristics of the Anglo-Saxon, Slavic, Mediterranean, Indian, Negroid and Mongol elements which inhabit America.

Anthropologists have disagreed on the racial affinities of the Polynesians. Some have classified them as Mongols, others have classified them as Caucasians, while still others have maintained that they are a separate race. This in itself is strong evidence that the Polynesians are a badly mixed people for whenever there has been a general disagreement as to the racial affinities of any group it has been found almost invariably that the group was a non-homogeneous group.

There is much vagueness as to what constitutes a Polynesian but as generally conceived and described, the Polynesian is a tall and remarkably well-proportioned type with a short head, a high and relatively narrow nose, straight or slightly wavy black hair and a yellowish brown skin. Now, as a matter of fact, in no part of Polynesia from which we have data, does this type make up the entire population at the present time. There is strong evidence that in times past, and not so very long past either, this element was entirely absent, or not present in any appreciable strength.

¹ Based upon the published craniometric and osteometric literature and upon the field data on the living Polynesians obtained by members of the Bayard Dominick Polynesian expeditions of the Bernice Pauahi Bishop Museum.

Look for a moment at stature or body height. The living men yield the following averages in centimeters:

Hawaiian 170	Marquesan 170	Tubuai 171
New Zealand 171	Tuamotu 172	Easter Island 172
Samoa 172	Tahiti 173	Tonga 173
		Cook 176

Compare with these figures the reconstructed stature of the skeletal remains which have been studied:

Hawaiian 163	New Zealand 163	Chatham Island 165	other Polynesians 166
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These differences are enormous and amount in some instances to nearly three inches.

The cephalic index tells a similar story of change:

Cephalic Length-Breadth Index		
	Skeletal	Living
Tahiti, Pomotu, Tubuai	76	85
Tahiti	77	86
Maori	74	78
Samoa	78	84
Marquesas	76	79
Hawaii	80	84

Brachycephaly or a tendency to short-headedness is characteristic of a majority of the living peoples, but not of the prehistoric peoples represented by the skeletal remains.

A study of the nasal index complicates matters somewhat. The nasal index of the skull varies from 44 in the Moriori to 53 in the remains from Easter Island. In detail it is distributed as follows:

Moriiori 43.9	Maori 47.9	Marquesas 49.3	Tahiti 49.4
Hawaii 49.9	Easter Island 52.5.		

On the living the nasal index has different values of course, but is similar to the nasal index in the skull in that a small index indicates a narrow nose and a large number indicates a wide nose. The values on the living for nasal index are:

Samoa 74, Tonga 76, Maori 76, Hawaiian 78, Tahiti 80, Tuamotu 80, Tubuai 80, Marquesas 82, Easter Island 82, Cook 85.

There is seen to be a tendency to both broad noses and narrow noses in both the long-headed and short-headed groups.

In the Chatham Island material we have the long head combined with a narrow nose, lack of prognathism and moderate stature. This element has been isolated in the living in all parts of Polynesia and is Caucasoid in appearance. It is probably a very primitive caucasoid type. If we are to call any type Polynesian it would almost seem that this type had the best claim to that title.

If we turn next to Easter Island, we find a long head combined with a broad nose and a moderate tendency to prognathism (projecting face). This element has long been recognized and has been described as Melanesian or an Oceanic negro. So far I have been unable to isolate this element in large numbers in the living population and consequently cannot state how closely it resembles the Melanesians. In the skeletal remains this type is fairly common in New Zealand, Easter Island, and to a lesser degree in Central Polynesia. It cannot rightly be called Polynesian, of course, since it is more important elsewhere.

In Tonga, Samoa, Tahiti, etc., we find an extremely short head combined with a relatively narrow nose and high stature. This element is the one generally taken as typical of Polynesia and by some anthropologists has been designated as the true Polynesian. I have already indicated above the objections to this. They are Polynesians in the same sense perhaps that the Anglo-Saxon inhabitants of the United States are Americans. Some authors have appreciated this fact and have called them Indonesians. Indonesian is a term generally applied to the Caucasoid peoples of Malaysia regardless of the fact that there are undoubtedly two Caucasoid elements in Malaysia, a long-headed one similar to the one I have called Polynesian, and a short-headed one related to the type under discussion. The principal objections to this use of the term Indonesian are the facts that it has been applied to two Caucasoid types, neither of which is important numerically in Indonesia, and that it has also been applied to other types more characteristic of Indonesia. This type has also been designated as Proto-Armenoid and Alpine.

In Hawaii, in the Marquesas and to a lesser degree elsewhere in Polynesia, we find a short head combined with a broad nose, low

stature and a dark skin. Some authors have described this as Negrito, but it is not Negrito in the generally accepted conception of that term. I have designated it as Indonesian chiefly because it is or has been a very important element in southeastern Asia and the Malay Archipelago. It should be pointed out, however, that I am using the term Indonesian in a sense entirely different from that in which Logan first used it. I am not the first to do this since Giuffrida-Ruggeri and others have previously used the term to describe other types than those designated by Logan.

The essential thing to note at present is that the population of Polynesia is composed of at least four different and distinct elements. Two of these are Caucasoid in appearance and quite generally distributed throughout Polynesia. One other is generally considered Negroid or Melanesian. A fourth is of somewhat doubtful affiliation, but shows several Negroid characteristics as well as some Mongoloid characters. These types combine in various proportions to make up the populations of the different island groups. Different islands in the same groups contain these elements in different proportions.

Before these types can be satisfactorily named it is necessary to have more information on their specific racial relationship. This is true outside of Polynesia as well. It is pretty generally recognized in anthropology that we have more names than physical types. The same type in three different parts of the world is often designated by as many different names. Our current anthropological classifications of man are a scramble of geography and anatomy. Until we untangle some of these highly complex mixed populations and make more progress on detailed relationships, we cannot work out any lasting classification. If it can be demonstrated beyond doubt that the tall short-headed, narrow nosed type in Polynesia is identical with the European and Asiatic Alpine, then it should be designated as a Polynesian branch of the Alpine Race. We should not have three terms, such as Alpine, Indonesian and Polynesian to designate the same type in different parts of the world.

The question will of course be raised, "Is it certain that these types are not local types differentiated by isolation on the different

islands?" This seemed at first plausible to me for it was something of a strain to my credulity to believe that some of these remote island groups had been reached by man not only once but in a few instances as many as four separate times. But when I found each and every one of these types outside of Polynesia I was forced to abandon the idea of local differentiation. No one of these four types is confined wholly to Polynesia. The distribution of these types both within and without Polynesia argues strongly against a local origin of these types in Polynesia.

Aside from the almost certain fact that the tall short-headed narrow-nosed element is a fairly recent arrival in Polynesia, the sequence of these types and their order of arrival in the various islands is not clear at the present time.

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THE FIELD OF PALEOLITHIC ART

By GEORGE GRANT MAC CURDY

THE paleolithic artist's range of models included both the animate and the inanimate, but was confined almost wholly to the fauna. Among the fauna, mammals (including man) largely monopolized his attention. Birds and fishes came in for a relatively small share; reptilian representations are practically non-existent, and the same may be said of invertebrates. Plant-like forms are very rare. The inanimate field is represented by claviform and tectiform figures; also by chevrons, frets or grecques, spirals, volutes, wave ornaments, and alphabetiform signs, some of which were derived from animate objects through processes of conventionalization.

In a study of cave art, one is impressed, although not surprised, by the extent to which it reflects the fauna of the time. To the hunter, game animals would naturally loom large on the horizon; that which makes the strongest appeal to the senses is the first to find expression, especially when it happens to be essential to one's existence. Among the animal forms reproduced in paleolithic art, game animals occur much more frequently than any other kinds; the horse far outnumbered the hyena; as does the red deer compared with the lion. To one animal killed because it was dangerous to man (or to the animals on which he fed), there would be scores of game animals captured. Besides, many of the representations are prayers for the increase of the species useful for food and would account in part for the preponderance noted above.

The cave artist not only had predilection for such species as the horse and red deer, but he also seems to have had a preference for the female of the species. In some species the sex distinction is much more pronounced than in others. The stag can be distinguished from the hind by the presence of antlers; figures of the hind far outnumber those of the stag, a fact which is significant. The hind is the symbol of fecundity; the larger the number of

hinds, the greater the increase of the herd. With the horse it is difficult for the artist to differentiate between the sexes; were it not so, we should probably find a like majority of mares over stallions. The same preference for the female sex holds good among representations of *Homo*, no doubt for kindred reasons.

The human form played by no means an insignificant rôle as a model for the cave artist; with but few exceptions, however, the artistic treatment of it was not so successful as was that of the lower animals. The failure of the paleolithic artist in this respect is, no doubt, more apparent than real since both by inclination and training we are more critical of human representations than of any other. Moreover, the cave artist had what seemed to him more weighty reasons for portraying game animals than man. In any event he evinced much skill in emphasizing the characteristic features of a given species, such for example as the peculiar outline of the mammoth with its high cephalic dome, deep nuchal notch, and broad sloping dorsal dome; or the short pointed muzzle of the stag and the finer distinctions between its antlers and those of the reindeer.

THE HUMAN FORM IN PALEOLITHIC ART

Forms distinctly human, including the entire figure or a part thereof, and anthropomorphic forms including masked figures have been found in France, Belgium, Austria, Germany, Russia, Czechoslovakia, Italy, and Spain. France leads with examples from thirty-two stations; Spain is represented by examples from two dozen stations; three stations have been reported from Czechoslovakia, and one each from Austria, Belgium, Germany, Italy, and Russia.

In the cave artist's treatment of the human form, the first things to attract the attention are: (a) the pictorial predominance of the female over the male; (b) the recurrence of a female type suggestive of the Hottentot or Bushman; and (c) the wide geographic and chronologic distribution of this type in Europe. To the figures in the round from Grimaldi, Brassempouy, Lespugue, Willendorf, and Mainz, there should be added the bas-reliefs from Laussel, all conforming to one type. They belong

to various Aurignacian levels and are suggestive rather of a symbolic than of a physical type. The female bust from Mas d'Azil, carved from the incisor of a horse, has long pendent breasts also suggestive of the Hottentot (Magdalenian). Those from Brassempouy have been referred to the Lower Aurignacian, and those from Willendorf, Lespugue, and Laussel to the Upper Aurignacian. A feature common to this group is the summary treatment of the head and extremities, the chief attention being bestowed upon the primary and secondary sex characters. In a few examples where the head is present there is an attempt to suggest hair, or a coiffure, by means of cross-hatching, as in the case of the *figurine à la capuche* (Brassempouy) and the negroid head from Barma Grande (Grimaldi). Still more remarkable is the suggestive way in which kinkiness is represented in the coiffure of the Venus of Willendorf.

Three steatopygic female figurines were discovered in 1922; one was found by Count R. de Saint-Périer in the *grotte des Rideaux* at Lespugue (Haute-Garonne) and the others (lower half only) by Dr. Otto Schmidtgen in loess at Mainz on the Rhine. The first is of ivory and practically complete; it is 14.7 cm. (5.8 in.) high, the largest ivory female figurine known to date. The features are not indicated; the hair, represented by parallel incisions, covers three-fourths of the face and descends at the back to the level of the shoulderblades. The breasts are enormous and the steatopygic characters very pronounced. A new feature is the slenderness of the waist, permitting the arms to hang free from the body at this level.

The human form is often treated in summary fashion. At Gourdan and Raymonden the figures, engraved on bone, are sketchy, quite small, and arranged in processions; the grouping and general treatment from the two localities are strikingly similar. Scarcely better defined is the diminutive human from La Madeleine incised on reindeer horn and represented as carrying a stick on the right shoulder; it is comparable with a series of small human figures incised on a rib, each with a staff on the shoulder, from the *Abri du Château* at Les Eyzies; and with the hunting scene (?) on reindeer horn from Laugerie-Basse, generally referred to as the *chasse à l'aurochs*.

In addition to a number of masked figures which are obviously human, there are a number of examples, chiefly engravings, in which the human form is but vaguely indicated; they may best be referred to as anthropomorphic figures. Representations of this kind have been found at Combarelles, Cro-Magnon, Font-de-Gaume, Gourdan, Laugerie-Basse, Marsoulas, and Mas d'Azil (in France); at Altamira and Hornos de la Peña (in northern Spain).

Human (and animal) paleolithic representations are, as a rule, of the entire figure. Figures of an arm, leg, phallus, or vulva are rare. On the other hand, and this is the exception which proves the rule, figures of the human hand are abundant, especially in the Pyrenean and Cantabrian regions. They have been reported from seven caves in France (Gargas, Bedeilhac, Trois-Frères, Les Eyzies Font-de-Gaume, Beyssac, David, and Blanchard at Sergeac) and from four in Spain (Altamira, Castillo, Santian, and Pretina).

The technique employed in representing the human hand was wholly different from that employed in any other cave art; it was ingenious but not of special artistic merit. Two methods were used to achieve the desired result: the chief one was to press one hand against the cavern wall and with the other apply to coloring matter in the form of a powder over an area sufficient to leave a negative imprint on removal of the hand. The imprint is usually of the left hand for the simple reason that a majority of mankind are (and were even in paleolithic time) right-handed. The other method was by means of color transference. The palm of the hand was dampened, covered with dry powdered paint, and then applied to the damp wall of the cave. As one might be led to expect, a majority of the hands stamped or printed on the walls are right hands; this is additional proof of dextral predominance.

At Santian (Santander) mural figures in red, suggestive of the human hand and lower arm, were reproduced by the ordinary free-hand application of color. They are more or less schematic or stylistic in treatment, grading off into forms suggesting the bird foot; they may have little to do with the positive and negative hand imprints. The latter are the oldest examples of paleolithic

mural art; the technique involved, therefore, represents an initial phase in the evolution of art in general. At Castillo, the hands underlie figures in yellow, and these in turn underlie figures in red. Figures of the human hand are most abundant in Spain at Castillo; in France, at Gargas. Many of the figures at Gargas represent hands that have been mutilated by the removal of one or more joints from one or more fingers.

The following table gives the localities, nature, and age (where determinable) of human representations in paleolithic art:

AUSTRIA			
Willendorf	Portable	Female figurine in stone	Aurignacian
BELGIUM			
Magrite	Portable	Ivory figurine	Aurignacian
CZECHOSLOVAKIA			
Brünn	"	Ivory statuette	Solutrean
Predmost	"	6 female figurines Stylistic engr. of female figure	Aurignacian
FRANCE			
Aurensan	"	<i>Homo</i> engr. on slate	
Bedeilhac	Mural	Human hand	
Beysnac	"	Negative figure of hand	
Brasempouy	Portable	Ivory figurines	Aurignacian
La Colombière	"	Figures engraved on bone	" or Magdalenian
Combarelles	Mural	Human leg; anthropomorphic	
Cro-Magnon	Portable	Woman full-length engraved on bone	Aurignacian
David	Mural	Engraved figures of men (ithyphallic) followed by women with pendant breasts; human hands in red or black	
Les Eglises	"	Human figure under tectiform	
Les Fyzies (Abri du Château)	Portable	Human figures engraved on rib; also hands	Magdalenian
Ferrassie	Portable	Vulva	Aurignacian
Font-de-Gaume	Mural	Human profile (?), hands	
Gargas	"	Human hands	Aurignacian
Gorge d'Enfer	Portable	Human phallus (double)	
Gourdan	"	Anthropomorphic	
Laugerie-Basse	"	"Venus impudique," female with reindeer, hunter with bison	
Lauscel	"	Four female figures and one male in low relief on stone	Aurignacian
Lespugue	"	Ivory female figurine	"
Lourdes	"	Human leg (?); a sorcerer	
La Madeleine	"	Human figure and arm	Magdalenian
Marcamps	"	Human head (?), of reindeer horn	
Marsoulas	Mural	Anthropomorphic	
Mas d'Azil	Portable	Anthropomorphic figures on bone; female bust	Magdalenian
Montespan		Vulva	Aurignacian
Portel	Mural	Human figure	

Raymonden	Portable	<i>Homo</i> on bone	Magdalenian
Rivière-de-Tulle	"	Anthropom. engr. on reindeer bone	
Les Roches (Blanchard,	"	Engraving of vulva on stone; phallus carved from bison horn	Aurignacian
Terme Pialat	"	Relief figure of <i>Homo</i> on limestone	
Teyjat	"	Phallus, masked figures	
Trois-Frères	Mural	Human hand imprints; sorcerer	
La Vache	"	Human stylistic forms	

GERMANY

Mainz	Portable	Lower half of two female statuettes	Aurignacian
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ITALY

Baoussé Roussé	"	6 figurines of crystalline talc, five of them female, also a negroid head	
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RUSSIA

Mézine	"	Stylistic human figures in the round	Aurignacian
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SPAIN

Albarracín	Mural	Paintings of <i>Homo</i>	
Alpera	"	" of hunters and women	
Altamira	"	Anthropomorphic figures	
El Arco	"	<i>Homo</i>	
Batuecas (2 stations)	"	Figures in color	Azilian probably
Carasoles del Bosque	"	Paintings of men	
Castillo	"	" of human hand	
Charco del Agua Amargo	Mural	Paintings of females	
Chiquita de los Treinta	"	" " men	
Cogul	"	" " " and women	
Cortijo de los Treinta	"	" " women	
Garcibuey	"	" " humans	
Hornos de la Peña	"	Anthropomorphic	
Jimena	"	"	
Lavaderos de Tello	"	Stylistic men	
Minateda	"	" figures in color	
Monte Arabi	"	Figures of men	
Peña	"	Stylistic figures in color	
Peñon de la Tabla de Pochico	"	" "	Neolithic (probably)
Pileta	"	<i>Homo</i> in color	
San García	"	" " clay	
Santian	"	Human hand	
Tajo de las Figuras	"	<i>Homo</i>	
Tortosillas	"	"	

MAMMALIA

Ever since man began his omnivorous career, mammals have probably furnished his chief supply of animal food; this is obviously true of the whole paleolithic period, especially of its last four epochs. We know which animals the Mousterians fed upon from their kitchen refuse. During the upper paleolithic period, we have two lines of evidence: the kitchen refuse and the animal

representations in art; both point to one and the same conclusion. The relative frequency of a given genus as a model for the artist varies approximately in direct ratio with the frequency with which the bones of that particular genus occur in the kitchen refuse. Both hunter and artist no doubt drew most heavily on the animal that was most abundant, other things being equal. Some animals are caught more easily than others by a hunter limited to primitive means. The horse and red deer were both fleet of foot, but either was a prize well worthy of special effort. It is surprising that the mammoth should have been sought so extensively as food and that the hare should not have played a more important rôle; the latter is scarcely represented in the art of the period. The horse was easily the favorite in France; in Spain it was second, conceding first place to the red deer.¹ Taking Europe as a whole, the horse predominates; and is followed in turn by the red deer, bison, wild goat, Bovidae (chiefly *Bos primigenius*), reindeer, and Cervidae. The original home of the horse was North America. Remains of the true horse (*Equus stenonis*) are found in the Pliocene and early Pleistocene deposits of Europe. One finds in the upper paleolithic deposits remains of several varieties of horse not unlike the modern Celtic or Arab type, the Nordic or forest type, and the steppe type (*E. przewalski*), also the wild ass or kiang (*E. hemionus*). These varieties are even recognizable in the art of the upper paleolithic period.

By tabulating the occurrence of animal forms represented in art from eight of the principal stations in France, the horse is found to predominate in six, the reindeer in one, and the bison in one. The stations in question are: Bruniquel, Combarelles, Font-de-Gaume, Laugerie-Basse, Lorthet, Lourdes, La Madeleine, and Mas d'Azil. The horse, reindeer, bison, Bovidae (chiefly *Bos primigenius*), and mammoth are, in the order mentioned, the most frequently represented. The horse, reindeer, and Bovidae (not including bison) occur in all eight stations; the bison is lacking in one (Lorthet) and Mammoth in three (Lorthet, Lourdes, and Mas d'Azil).

¹ Red deer (*Cervus elaphus*) was common during the Aurignacian; became rare in the Solutrean and Lower Magdalenian; was abundant in the Upper Magdalenian; and finally supplanted the reindeer.

At Bruniquel the animal representations in order of frequency are: Equidae (chiefly *Equus caballus*), reindeer, wild goat, *Bos*, Capridae chamois, bison, red deer, mammoth, musk-ox, and *Homo*.

The order of frequency at Les Combarelles is: Equidae, mammoth, antelope, Bovidae, reindeer, wild goat, bison, Capridae, cave bear, *Felis*, and wolf.

The bison easily leads at Font-de-Gaume and is followed by: Equidae, mammoth, reindeer, *Bos*, Capridae, rhinoceros, *Felis*, cave bear, *Homo*, and wolf.

The reindeer leads at Laugerie-Basse, being followed by: Equidae, fish, Bovidae, bison, red deer, wild goat, *Cervus*, *Homo*, *Felis*, and otter.

At Lorthet the order of frequency is: Equidae, Cervidae, fish, red deer, Bovidae, roebuck, *glutton*, and reindeer.

The horse is first at Lourdes with Bovidae a fairly close second; then follow in their turn, the bison, bird, reindeer, red deer cave bear, Cervidae, fish, and rhinoceros.

At La Madeleine the horse again leads; the reindeer, a close second, is followed by the red deer, Bovidae, Cervidae, ruminants, bison. *Felis*, *Homo*, and mammoth.

The eighth station, Mas d'Azil, concedes first place to Equidae by a wide margin; after the horse there come in turn: reindeer, wild goat, Bovidae, fish, bison, *Bos*, bird, red deer, antelope, Cervidae, anthropomorphic figures, *Homo*, ruminant, and wild boar.

A somewhat different faunal composition is reflected in the paleolithic art of Spain, even though the field be limited to the region north of the Cantabrian mountains. The horse concedes first place to the red deer, with the bison a close third. *Elephas* is rare and the reindeer disappears altogether. The animals most frequently represented are, in the order given, red deer, Equidae, bison, and Bovidae (chiefly *Bos*). The foregoing is based on the stations of Altamira, Castillo, Hornos de la Peña, and La Pasiega.

The order of frequency in each is:

(a) Altamira. Bison, horse, red deer, Capridae, wild boar, chamois, Cervidae, *Elephas*, and wild goat.

(b) Castillo. Red deer (mostly female), bison, horse, *Bos*, wild goat, Capridae, chamois, and *Elephas*.

(c) Hornos de la Peña. Horse, bison, *Bos*, wild goat, and red deer

(d) La Pasiega. Red deer (mostly female), horse, *Bos*, bison, wild goat, chamois, and *Elephas*.

The mammals occurring in cave art are listed in the following tables which serve as indices to the relative frequency and geographic distribution of art works dealing with mammalian forms.²

Badger(?)

France. Gourdan

Bison

France. Bedeilhac, Bernifal, Bout-du-Monde, Bruniquel, Cap Blanc, Champs-Blancs, La Colombière, Combarelles, La Croze-à-Gontran, David, Les Eglises, Les Eyzies, Font-de-Gaume, Gargas, La Grèze, Isturitz, Laugerie-Basse, Limeuil, Lourdes, La Madeleine, Marcenac, Marsoulas, Mas d'Azil, Montspan, La Mouthe, Nancy, Niaux, L'Ombrive, Pair-non-Pair, Le Placard, Le Portel, Raymonden, Spugo, Teyjat, Trois-Frères, Tuc d'Audoubert

Spain. Las Aguas de Novales, Altamira, El Buxu, Castillo, Cogul, Hornos de la Peña, La Pasiega, La Pileta, Pindal, Venta de la Perra

*Bovidae*³ (chiefly *Bos*)

Czechoslovakia. Kostelik

France. Arcy, Bruniquel, Les Combarelles, La Croze-à-Gontran, Enlène, Les Eyzies, Font-de-Gaume, Gourdan, Laugerie-Basse, Limeuil, Lorthet, Lourdes, La Madeleine, Mas d'Azil, Marsoulas, Le Placard, La Vache

Spain. Albarracín, Alpera, Altamira, El Arco, Las Batuecas, Calapatá, Castillo, La Clotilde, Cogul, Covalanas, El Charco del Agua Amarga, Hornos de la Peña, La Loja, Mineteda, Monte Arabi, La Pasiega, La Pileta

² The stations are arranged alphabetically under the various countries and each station stands for one or many representations of the animal in question.

³ In some cases the execution of the work is such as to make it impossible to determine which genus or species of a family was intended, in such, the family name is employed.

Canidae

France. Gourdan, Laugerie-Basse, Lorthet, Mas d'Azil

Spain. Alpera

Canis

Spain. Alpera, Minateda

Capridae

France. Bruniquel, Font-de-Gaume, Massat

Spain. Altamira, Castillo

Cervidae

France. Ammonite, La Colombière, Combarelles, Les Eyzies, Fontarnaud, Gourdan, Isturitz, Laugerie-Basse, Lorthet, Lourdes, La Madeleine, Mas d'Azil, Massat, Le Placard, Raymonden, Les Roches, Saint-Mihiel, Soucy, Tuc d'Audoubert

Spain. Altamira, El Arco, El Buxu, Cogul, El Charco del Agua Amarga, Minateda, Monte Arabi, El Tajo de las Figuras

Chamois

France. Bruniquel, Les Cambous, Goudan

Spain. Altamira, Castillo, La Pasiega, Tortosillas

*Elephas*⁴ (chiefly mammoth)

France. Bernifal, Bruniquel, Chabot, Combarelles, La Croze-à-Gontran, David, Le Figuiet, Font-de-Gaume, Gargas, Laugerie-Basse, La Madeleine, Montespán, La Mouthe, Pair-non-Pair, Raymonden, Les Roches, Saint-Mihiel, Trois-Frères

Germany. Klause

Spain. Altamira, Castillo, La Pasiega, Pindal

Elk (or moose)

France. Gourdan, Les Rebières

Spain. Alpera

*Equidae*⁵

France. David, Isturitz, Mas d'Azil, Montespán(ass), Les Roches, Soucy, Trois-Frères

Switzerland. Schweizersbild

Felis

France. Arudy, Bruniquel, La Colombière, Les Combarelles,

⁴ *Elephas antiquus* is probably represented in cave art at Castillo, Spain.

⁵ Most of the equidian figures represent *E. caballus*; a few, the wild ass. (*E. hemionus*).

Font-de-Gaume, Gourdan, Isturitz, Laugerie-Basse, La Madeleine, Montespán, Trois-Frères

Fox

France. Arudy, Les Combarelles, Le Placard

Glutton

France. Laugerie-Haute, Lorthet

Hare

France. Isturitz

Horse

England. Robin Hood, Sherborne

France. Arudy, Aurensan, Batie, Bernifal, Bout-du-Monde, Brassempouy, Bruniquel, Calévie, Cap Blanc, Chaffaud, La Colombière, Comarque, Combarelles, La Crouzade, La Croze-à-Gontran, Enlène, Les Eyzies, La Ferrassie, Font-de-Gaume, Gargas, Gourdan, Laugerie-Basse, Laugerie-Haute, Laussel, Lespugue, Limeuil, Lorthet, Lourdes, La Madeleine, Marcenac, Marsoulas, Mas d'Azil, Montespán, La Mouthe, Murat, Nancy, Neschers, Niaux, Le Placard, Pont-du-Gard, La Pépue, Le Portel, Raymondén, Sainte Eulalie, Saint-Marcel, Saint-Mihiel, Sordes, Spugo, Teyjat, Trois-Frères, Tuc d'Audoubert

Germany. Obercassel

Italy. Romanelli

Spain. Albarracín, Alpera, Altamira, El Buxu, Castillo, Covalanas, Doña Trinidad, La Haza, Hornos de la Peña, Minateda, Monte Arabi, La Paloma, La Pasiega, La Pileta, Pindal, San Antonio, San García, La Sotarriza, Valle

Switzerland. Kesslerloch

Hyena

France. Laussel, La Madeleine, Montespán

Lynx

Spain. Las Batuecas

Moose (see Elk)

Musk Ox

France. Bruniquel, La Colombière, Laugerie-Haute

Switzerland. Kesslerloch

Otter

France. Laugerie-Basse

Red Deer

France. Bellet, Bout-du-Monde, Bruniquel, Chaffaud, La Chaise, Les Eyzies, Gourdan, Les Hoteaux, Laugerie-Basse, Laugerie-Haute, Laussel, Limeuil, Lorthet, Lourdes, La Madeleine, Marcenac, Mas d'Azil, Montespán, Montfort, Murat, Pair-non-Pair, Le Placard, Planche-Torte, Le Portel, Le Pouzat, Raymonden, Teyjat, Trois-Frères

Spain. Albarracin, Alpera, Altamira, Las Batuecas, El Buxu, Calapatá, Chiquita de los Trenta, Cortijo de los Treinta, Covalanas, Castillo, El Charco del Agua Amarga, Doña Trinidad, Estrecho de Santonje, Hornos de la Peña, Lavaderos de Tello, Minateda, Monte Arabi, La Paloma, La Pasiega, La Pileta, Pindal, Salitre, Tortosillas, Valle

Reindeer

France. Bout-du-Monde, Bruniquel, La Colombière, Combarelles, Corgnac, Crozo de Gentillo, Les Eyzies, Font-de-Gaume, Gourdan, Laugerie-Basse, Limeuil, Livèyre, Lorthet, Lourdes, La Madeleine, Mas d'Azil, Massat, Montespán, La Mouthe, Le Portel, Sainte-Eulalie, Saint-Marcel, Solutré, Soucy, Teyjat, Trois-Frères, Tuc d'Audoubert

Germany. Schussenquelle

Spain. Minateda

Switzerland. Kesslerloch

Rhinoceros

France. Arcy, La Colombière, La Ferrassie, Font-de-Gaume, Gourdan, Lourdes, Le Placard, Trois-Frères

Spain. Minateda

Switzerland. Kesslerloch

Rodent

Germany. Obercassel

Roebuck

France. Lorthet

Ruminant

France. La Madeleine, Mas d'Azil, Pair-non-Pair, La Pépue

Saiga Antelope

France. Gourdan, Lacave, Laugerie-Haute, Mas d'Azil

Spain. Minateda

Seal

France. Brassempouy, Gourdan, Montgaudier, Sordes, Teyjat, La Vache

Ursus (chiefly cave bear)

France. La Colombière, Comarque, Combarelles, David, Font-de-Gaume, Isturitz, Lespugue, Lourdes, Massat, Montespan, Teyjat, Trois-Frères

Spain. Venta de la Perra

Wild Boar

France. Mas d'Azil

Spain. Altamira, Charco del Agua Amarga, Minateda

Wild Goat

France. Arudy, Bruniquel, Combarelles, La Croze-à-Gontran, Les Eglises, Les Eyzies, La Ferrassie, Gourdan, Laugerie-Basse, Limeuil, Livèyre, Lorthet, Marcenac, Marsoulas, Mas d'Azil, Montespan, La Mouthe, Nancy, Niaux, Planche-Torte, Trois-Frères, Le Veyrier

Spain. Alpera, Las Batuecas, El Buxu, Calapatá, Cortijo de los Treinta, Coto de la Zarza, Castillo, Las Grajas, Hornos de la Peña, Minateda, Monte Arabi, La Pasiega, La Pileta, El Prado del Azogue, Quintanal

Wild sheep

France. La Colombière

Wolf

France. Bruniquel, Les Combarelles, Font-de-Gaume, Gourdan, Lourdes

BIRDS

Representations of the bird are relatively rare, but occur in both portable and mural art. They include figures in the round, in low relief, and engravings; they adorn batons as well as dart-throwers and at least two examples of mural art have been noted. Among the figures that can be identified with a fair degree of certainty, one finds the crane, duck, goose, grouse, owl, penguin, partridge, and swan (practically all edible forms).

A bird figure from the loess station of Andernach (Rhine) illustrates, as well perhaps as any other example of portable art, the ability of the artist to improvise, to seize upon resemblances,

and make of the imagination a labor-saving device. It is carved from the basal portion of a reindeer horn in which the sculptor saw the head, beak, and eyes of a bird; the wings and tail were added by means of a few incised lines on the shaft which formed the body of the bird. Another notable figure of a bird in the round ornaments a dart-thrower of reindeer horn found by Piette at Mas d'Azil. The fragmentary specimen has been restored by Breuil, who sees in the figure a grouse. The crochet of a dart-thrower of reindeer horn from Raymondén is carved so as to represent the head and beak of a bird.

The bird has been found in cave art at nineteen stations:

France. Arudy, Bruniquel, Fontarnaud, Gargas, Gourdan, Isturitz, Lourdes, Mas d'Azil, Raymondén, Soucy, Teyjat, Trois-Frères

Germany. Andernach

Italy. Romanelli

Russia. Mézine

Spain. Minateda, Monte Arabi, El Pendo, El Tajo de las Figuras

FISH

The fish occurs more frequently than the bird in cave art. It is represented in some two dozen stations in France alone, but occurs somewhat rarely outside. Among the kinds that figure in cave art the carp (?), flounder, pike, plaice (or brill), salmon, Spanish mackerel, and trout have been identified.

There are some fifty paleolithic stations in Europe in which harpoons of reindeer horn have been found, all dating from the Magdalenian epoch. The harpoon may well have served in fishing, especially for salmon and pike. In about half of the stations at which figures of the fish have been reported, harpoons also occur, namely at: Arlay, Arudy, Bruniquel, Les Cambous, Goyet, Isturitz, Kostelik, Langerie-Basse, Lespugue, Lorthet, La Madeleine, Mas d'Azil, Sordes, and Teyjat. At Teyjat, the harpoons and the engraving of a fish came from the same Magdalenian level. Among the remaining stations with representations of the fish, some were not inhabited during the harpoon-making epoch (Upper Magdalenian). In the Piette collection from Mas d'Azil,

is the figure of a fish carved from reindeer horn and represented as having been pierced by a harpoon.

The hook was also employed in fishing. Many examples of a primitive fish-hook made of a straight sliver of bone or reindeer horn, 3 or 4 cm. (1—1.5 in.) long and pointed at both ends were found at Bruniquel; other examples, including barbed hooks, are reported from some of the caves and rock shelters of the Dordogne. The engraving of a fish found by Labrie at Fontarnaud is of unusual interest because the fish is represented as biting at what appears to be intended for a barbed hook.

In certain figures of the fish the surface is so incised as to resemble the vertebral column and spines or ribs; this is true of the specimen recently found by E. Passemard at Isturitz, and the one found by Count de Saint-Périer in the grotte des Boeufs at Lespugue. An even greater stretch of phantasy is to be noted in one (now in the Yale collection) of the fish figures from the cave of Rey. The body and tail of the fish are cut from a ruminant rib split in the plane of its maximum dimensions. The artist imagines the split rib to represent the split body of the fish and by means of incised lines makes the framework of the fish to show on the split side only.

Perforated fish vertebrae were often used as beads during the cave-art period. In one of the Mentone caves, Rivière found a paleolithic necklace composed of twenty-four salmon vertebrae. The remarkable necklace found by Verneau with one of the skeletons (the young man) composing the triple burial at Barma Grande cave (Grimaldi), was made up of a happy combination of canine teeth of the deer, univalve shells (*Nassa neritéa*), and fish vertebrae. One of the batons of reindeer horn found by Lartet and Christy at La Madeleine has a marginal decoration closely resembling a series of fish vertebrae in their anatomic relation.

Figures of the fish have been found at thirty-one stations and in at least five European countries as follows:

Belgium. Goyet. Trout engraved on a baton of reindeer horn; found by Dupont.

Czechoslovakia. Kostelik. Ramus of the lower jaw of a horse carved into the form of a fish; found by M. Křiž.

France. (1) Arlay. Engraving reported by Girardot

(2) Arudy. Fish carved from ivory and one engraved on reindeer horn; found by F. Mascaraux in the cave of Saint-Michel

(3) Brassempouy. Engraving found by Piette

(4) Bruniquel. Engraving on bone from the Château rock shelter; found by Cartailhac

(5) Les Cambous. Tail of a fish engraved on reindeer horn; published by Bergounoux

(6) Chaffaud. Fish carved in reindeer horn with contours cut away; published by G. Chauvet (Gaillard de la Dionnerie collection at Poitiers)

(7) La Croze de Tayac. Engraving on an antler of Cervidae; published by Rivière

(8) David. Mural figure, probably that of a pike.

(9) Fontarnaud. Engraving on reindeer horn (Labrie collection)

(10) Gorge d'Enfer. Large figure in relief of a salmon on the ceiling of the grotte du Poisson; found in 1912 by Maurice Marsan

(11) Gourdan. Pike engraved on reindeer horn; a fish tail carved in the round from the palmate portion of a reindeer horn and provided with a hole for suspension as a pendant or charm; both published by Piette

(12) Isturitz. Salmon (or trout) engraved on a baton; found by Passemard

(13) Laugerie-Basse. Pike engraved on a fragment of reindeer lower jaw; some sixteen other examples engraved on bone and reindeer horn, one of which (probably salmon) is associated with the figure of an otter

(14) Lespugue. Fine figure of the flounder, of bone with contours cut away; recently discovered by the Count de Saint-Périer in Magdalenian deposits of the grotte des Boeufs; engraving of fish on bone from the grotte des Harpons

(15) Lorthet. Several salmon in juxtaposition with two stags and a hind, engraved on a baton of reindeer horn with

the artist's mark (two lozenge-shaped signs) affixed; figure of flat bone with the contours cut away, Piette collection

(16) Lourdes. Figure made from flat bone with contours cut away; Piette coll.

(17) La Madeleine. Carp (?) engraved on both sides of a section of reindeer horn; figures engraved on batons of reindeer horn; marginal decoration resembling a series of fish vertebrae in their anatomic relation, on a baton; published by Lartet and Christy

(18) Mas d'Azil. Fish carved from reindeer horn and represented as having been pierced by a harpoon; two other figures on bone and one on reindeer horn (one of these was evidently used as a dart thrower, a fin forming the crochet) Piette collection

(19) Niaux. Two figures of the trout incised in the compact clay on the cavern floor of the diverticulum at the entrance to the *salon noir*. Published by Cartailhac and Breuil

(20) Placard. Javelin points decorated with stylistic figures of the fish, one of which resembles the flounder (eyes not indicated). Published by Breuil

(21) Pont-du-Gard. Figures of the fish and horse on bone; found by Cazalis de Fondouce in the cave of Salpêtrière

(22) Rey. Two sculptured figures, probably salmon, each carved from a ruminant rib split in the plane of its maximum dimensions. In one the entire fish is represented with a high degree of artistic skill; in the other, the body and tail only are represented.

(23) Sordes. Engraved figure of a pike on a perforated canine tooth of the cave bear; found by Lartet and Duparc in the cave of Duruthy

(24) Teyjat. Engraved figure of a fish on a spatulate bone implement from the cavern on La Mairie; published by Capitan, Breuil, Bourrinet, and Peyrony

(25) Trois-Frères. Figure of a fish on bone; found by Count Begouen
Serpentiform figures, probably of the eel (or the snake), have

been reported from Gourdan, Lorthet, La Madeleine, Montgaudier, and Teyjat.

Poland. Wierchow. Engraving of a fish on the rib of a reindeer found by Zavisza

Spain. (1) Batuecas, Las. Mural painting of the fish, probably of Azilian age; found by Breuil

(2) Minateda. Mural figures of the fish; reported by Breuil

(3) La Pileta. Several mural engravings of the fish, one of which is 1.5 m. (4.9 ft.) long; represents a marine fish, probably a plaice or brill; published by Breuil, Obermaier, and Verner

INVERTEBRATES

The invertebrate world does not seem to have appealed to the paleolithic artist. Invertebrates did not serve the needs of man to any appreciable extent; when wanted, they could be had without resort to magic. Five examples have been reported: (1) the facsimile of a *Cypraea* shell carved from ivory with a large loop for suspension, from Pair-non-Pair (middle Aurignacian), (2) an ivory beetle (Coleopter) of Magdalenian age from Cap Blanc, (3) an insect (Coleopter) in lignite from Arcy, (4) a lady bug from Laugerie-Basse, and (5) an insect (Coleopter) in ivory from the grotte du Coléoptère, Belgium (Magdalenian).

FLORA

As was the case with invertebrates, and perhaps for similar reasons, the plant world was of little concern to the cave artist. Figures that might be construed as plant representatives have been found at only a few stations, including Arcy (grotte du Trilobite), Gaubert, Gourdan, Lourdes, Marsoulas (?), Mas d'Azil, and Le Veyrier.

THE INANIMATE IN PALEOLITHIC ART

Portrayal of animal forms was the cave artist's chief concern, with a decided predilection for vertebrates and among the vertebrates, Mammalia easily ranked first. There is but a faint pictorial reminder of the cave man's contact with the invertebrate life about him; the same is true so far as the plant world is concerned.

Inanimate objects fared somewhat better; among these are classed decorative motives that might have been derived from animal forms through processes of conventionalization, such as chevrons, frets or grecques, spirals, volutes, etc.

Alphabetiform Signs. Before the close of the Magdalenian Epoch symbolism began to play an important rôle in Paleolithic art. Piette believed these Magdalenian symbols to be figures or images employed as signs of objects; therefore, they represent words. One of the early Paleolithic symbols is the dotted circle, supposed to be a sun symbol (Gourdan, Lourdes); it reappears as an Egyptian hieroglyph, also on dolmens and menhirs, on Bronze-Age funerary urns, and ornaments of the Iron Age. The circle without the dot passed into ancient alphabets, and from them into modern alphabets. The lozenge was employed as an artist's signature at Lorthet.

Piette distinguished two successive systems of writing in the Magdalenian—the hieroglyphic and the cursive; he believed the latter to be derived from the former, but admitted that since symbols are creatures of convention, they may from the beginning have been figures formed by geometric lines instead of being simplified images.

Alphabetiform symbols which have been interpreted as proof of the existence of primitive writing during the Magdalenian Epoch have been found at a number of stations in France, including Crozo de Gentillo, Gourdan, Lorthet, La Madeleine, Mas d'Azil, and Placard; they have also been found in Spain at La Pasiega.

Chevrons, Frets, Spirals, Volutes, Wave Ornaments. As previously stated, ornamental motives may be derived from realistic originals. To what extent this is true of Paleolithic chevrons, spirals, sigmoids, volutes, etc., it would be difficult to say. They are, no doubt, in a measure the result of a tendency to conventionalize, to standardize, to symbolize after the tide of realism had begun to ebb. The chevron is employed at a number of stations including Mas d'Azil, Sordes, and Teyjat in France, and Wildscheuer in Germany. Spirals, sigmoids, and volutes identical in pattern and technique have been found at Arudy, Lespugue, and Lourdes in France; and at Hornos de la Peña in

Spain. A wave ornament incised on a large rib found in Solutrean deposits at Předmost is unique so far as the author's knowledge goes. The fret or grecque is developed to an unexpected degree in the loess station of Mézine. The patterns, incised on ivory, were reported by Volkov as belonging to the Upper Aurignacian; but Tchikalenko believes them to date from near the close of the Magdalenian Epoch.

Claviform Signs and Darts. Club-shaped figures, both engraved and in colors, so far as the author can recall, are found only on cavern walls in a number of French and Spanish stations. They are associated for the most part with animal figures and are, no doubt, of magic import. Examples occur in three important caverns of Ariège: Niaux, Trois-Frères, and Tuc d'Audoubert. In the latter, a claviform is incised across the head of a reindeer engraved on the cavern wall. The claviforms from Niaux and Trois-Frères are in color and not directly associated with animal figures. At Combarelles a figure that admits of being interpreted as a claviform is incised longitudinally on the head of a horse.

The claviform is found in southern Spain at Altamira and Pindal. Beneath a wounded bison at Pindal are six club-shaped figures in color, all oriented in the same manner. The original bludgeons for which these stand were obviously of wood since none have been preserved; they were about 1 m. (39.4 in.) in length if the artist drew them and the accompanying bison to the same scale.

That the paleolithic artist did not ignore the matter of scale when executing a group is seen in even a cursory examination of the repertory of cave art. Many examples might be cited in proof of it: the mother and her young, the male and female of the same species; a herd of a given kind, the hunter and the animal hunted, etc. It goes without saying that figures in accidental juxtaposition, executed at different times and by different artists, would not conform to the same scale. Again, cases might arise where it would not be expedient to lay much stress on observing this rule. A case in point is apparently afforded by a decorated bone pendant from Raymonden with an engraved scene depicting a hunter's

feast. The dead, dismembered, partially consumed bison rightfully occupies the center of the stage and is accordingly drawn to a larger scale than are the feasting hunters arranged in two rows, one on each side of the carcass. The position of the forelegs indicates that they have already been disjoined and the vertebral column is laid bare. The pendant also served as a hunter's tally.

The subject of claviform figures cannot be dismissed without reference to the cavern of Altamira, where more than a dozen claviforms are painted on the famous ceiling, some of them encroaching upon the space occupied by the legs of the large figure of the hind.

Darts dangling from the sides of wounded animals are often depicted; the best known examples are from Niaux and Tuc d'Audoubert in Ariège, and Pindal in northern Spain. Some of the clay statues and figures in high relief of various animals from the newly discovered cavern of Montespan (Haute-Garonne) are literally riddled with punctures representing dart wounds. The figure of a harpoon incised on a pebble has been found at Gourdan (Haute-Garonne).

Tectiforms. Tent-shaped figures incised and in color, have been found on cavern walls of both France and Spain. They are often placed directly on animal figures as if to imply a direct or desired association. Two of these tectiforms resembling a front view of two over-lapping tents without sides, are incised on the figure of a mammoth at Bernifal. Two tectiforms of more elaborate form including sides and openings, are painted on the body of a mammoth at Font-de-Gaume. Two other similar figures are painted on the body of a reindeer at Font-de-Gaume, where a total of nineteen tectiforms has been listed. Other French stations in which tectiforms have been found include: Les Combarelles, La Mouthe, Les Eglises, Trois-Frères, and Marsoulas.

Tectiform signs also occur in both northern and southern Spain: Bolao, Castillo, La Pasiega, and La Pileta.

The term tectiform is well chosen because of the resemblance of the figures to primitive dwellings and because of the probability that they actually represent the kind of temporary abode employed by the upper paleolithic races. Man of that period

dwelt in caves and rock shelters wherever they were to be found and if habitable; elsewhere he had recourse to artificial and more or less temporary shelters. The tectiforms reproduce in a remarkable manner the simple shelters, tents, and huts in use today among primitive and nomadic races in various parts of the world.

MATERIALS EMPLOYED IN PALEOLITHIC ART

Artists of the historic period have a wide range of materials to serve as a vehicle of art expression,—chiefly canvas, paper, textiles, plaster, the various metals, pottery, porcelain, glass, skins, clay, bone, horn, ivory, wood, stone, and coloring matter. The first seven of these were certainly unknown to the paleolithic artist who was limited to what he found ready to hand in nature. This limitation, together with the paucity of utensils at his command, was a serious handicap to the artist of the Old Stone Age. It is known from the record, that in portable art he made use of stone, bone, ivory, reindeer horn, and stag horn, the chief vehicles being bone and stone. Bones of both mammals and birds were freely employed, usually without any previous preparation. Various kinds of stone were pressed into service, some of them quite hard, others soft. The list includes: crystalline talc, lignite, schist, gritstone, slate, and several varieties of limestone. Sometimes pebbles were employed.

All these ready-to-hand materials are of a more or less non-perishable nature; but it would not be logical to assume that such were the only materials employed. Wood is well adapted as a medium of art expression; it was available and the cave artist had tools well adapted for working it. Wood is widely used for art purposes by primitive living races; there is every reason, therefore, to assume that the paleolithic artist made free use of wood from which, no doubt, many of his ornamented dart-throwers were made. The skins which served for clothing were probably decorated, and the practice of painting the body might also have been in vogue.

Stationary art, which adorns the walls, ceilings, and sometimes even floors of caverns, and the walls of rock shelters, if engraving or fresco, is done in stone and in rare cases, stalagmite; if painted,

ocher and oxide of manganese furnished the coloring matter. In the field of stationary art, clay was used perhaps much more extensively than the record would indicate; for only under exceptionally favorable conditions could one expect figures of untempered and unbaked clay to survive the ravages of time.

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A PRELIMINARY CONSIDERATION OF THE CULTURE AREAS OF AFRICA

BY MELVILLE J. HERSKOVITS

THE culture area concept, as advanced by the American anthropologists, and applied to the American Indian cultures, is one which has steadily gained ground and is now largely accepted in the study of these cultures. It is essentially an empirical thing, and one that has proved its usefulness in museum technique, library classification, and for pedagogical purposes. Essentially, it is as follows: it has been found that when a large region, such as a continent, is surveyed for any particular culture trait or group of traits, the distribution of those traits will be such that they can be plotted on a map in continuous areas. At the same time, though the traits differ from one region to another, they may still be recognizable, and, in the main, historical connection can be postulated between those places in which they are found. If, starting with a given culture, one investigate the cultures of the peoples surrounding those possessing this culture, it will be found that there are many resemblances between the material culture, folk-lore, religion, social organization, of the people studied and of those adjacent to them. It will be found, further, that extraneous elements will begin to intrude as one gets farther away from the region in which this culture is strong, until, finally, one comes to a region in which the culture is almost entirely different from the culture originally studied.

Regions in which the culture is more or less of a unit, —i.e., comparable, are thus termed culture areas, and those peoples who have the most exuberant development of the culture are termed people with the typical cultures. As we move in space from the center of the area,—which, it may be noted, is not of necessity the geographical center,—and extraneous cultural elements begin to intrude, we shall come at length to a place where the culture, for the ethnologist, is what may be called weak. This is not to

argue that the culture of such peoples is, in their own inner life, any the less vivid than is that of the peoples having the typical cultures, but it merely means that, from the point of view of the student, there are not so many outstanding traits here as might be found among the latter. The cultures are indeterminate, partaking of the more vivid cultures surrounding them, and presenting few outstanding traits of themselves. Such regions may be termed marginal although it is to be admitted that the use of the term to denote those tribes of meagre culture who live in the outlying regions of the earth may engender a confusion which is not to be desired. No better word, however, has been devised as yet, and "marginal" will be used, therefore, in this paper to denote cultures which lie on the margin of the area of the distribution of the more outstanding cultures. However, it is not only true that tribes at the border of an area are marginal; it sometimes occurs that entire areas have cultures of this type and may be described by the same term. Such a culture, as is generally understood, is that of the Plateau region in North America, where the peoples exhibit few traits which serve to distinguish them sharply from the regions surrounding them; another such is the Mackenzie area.

Since the concept has proved of such usefulness in the study of the cultures of the North American Indians, it was felt that it should be further tested, and an attempt was made last year to apply it to the African civilizations. The East African region from the north of Lake Victoria Nyanza down the East Coast to the Cape was studied intensively, and it was found that, on the basis of the existence of cattle and the tremendous part they play in the lives of the people, a culture area might be mapped quite in the manner in which the American areas have been laid out, and this was done, and called the East African Cattle Area. In the consideration of the area, it was found necessary not only to define its traits, but, in order to mark its limits, to differentiate it from those regions surrounding it which were not included in the distribution of its culture. Therefore, foundations were laid for the mapping of the Hottentot, Bushman, Congo, East Horn, and Eastern Sudan areas, although it was not in the purpose of the

study to describe these areas as the East African area had been described. At the same time, it was felt that a preliminary map of the culture areas for the entire continent of Africa might be desirable, for, as has been said, the arrangement of museum specimens, the cataloguing of books, and the purposes of pedagogy are all furthered by such mapping.

Before we proceed, however, to the naming and characterizing of the areas which have been roughly mapped, it might be well to take time to mention a few of the questions which must naturally arise in the consideration of the problems of the distribution of cultural data in areas. In the first place, may it not be objected that there is no definite change from one culture to another, but that this is so gradual that one is at a loss where to place the boundary line? This may or may not be true, but since the entire concept is schematic to the extent to which it is, the boundaries have been constructed, in this case, as in that of North America, as straight lines which are more or less arbitrarily drawn. It is only in some cases, in which the ever-present limiting climatic or geographical feature is strongly present, that one can distinguish sharply between the end and beginning of two cultures. This is true in the case of the division between the Congo area and the East African Cattle area, where the existence or non-existence of cattle is determined rigidly by the line of sixty-inch rainfall, which allows the vegetation among which cattle cannot live, and which permits the deadly tsetse fly to flourish. Again, how are the traits on which an area is to be based selected? In the main, the selection is quite empirical, those traits which are the most outstanding being those which determine the selection of an area and its description. However, this does not argue that a given trait may not be distributed over a number of areas, or even in parts of two areas. Thus, in the Victoria Nyanza region, we find traits that are distinctly Congo, while wife-buying prevails not only all over Africa, but in many other parts of the world as well. This does not mean, however, that the most distinctive traits of a given region are not to be primarily considered,--in the example given, the existence of cattle, or of the many customs which comprise the cattle complex--and thus justify the refusal to place this spot in the Congo area rather than in the East African.

Further, it must not be assumed that the culture in an area is strictly uniform. It has been observed that the closer one scrutinises an area, the more it tends to be broken up into smaller and smaller units until it finally disappears. This is quite true, and in all culture areas there are small regions in which the culture is far from typical. However, this should not deter us from seeing the problem,—the classification of cultural data,—in the larger sense, and, for the purposes named, from following the plan which presents itself as most usable in such classification. The underlying basis of the culture area—the fact of the diffusion of culture—is another problem which might well merit extended discussion in this paper, but since it is the purpose to make it in the main descriptive, there is only space for the assertion that the American culture area differs distinctly from the *Kulturkreis* of the Graebnerian school. It is based on the continuous contemporaneous geographical distribution of the culture studied, and is not, as is the Graebnerian *Kulturkreis*, an attempt to reconstruct the origin and distribution of a *Kulturkomplex* composed of arbitrarily selected traits. The problem of the historical development and spread of culture is a real one, but it does not lie in the province of the present paper. The lack of insight of the Graebnerian school into the psychological as well as the material interrelations of the traits of a culture is perhaps the greatest difference between the *Kulturkreis* and the culture area, for, to us, the area, to mean anything must be more than a tabulation of unrelated mechanical data. It must envisage a living entity, which has a comparable significance in the lives of the peoples who live under it and practise it, and must not be a mere study of regions, perhaps not even continuous, in which this hypothetically diffused series of traits may be found.

If we turn to a consideration of the areas themselves in which we have divided Africa, we find, as we proceed from the southern extremity of the continent northward, that the first area may be called the *Hotentot*.¹ The culture of this region is not geographi-

¹ The references to the cultural facts mentioned in this paper have not been documented, as it is felt that they are of so general a nature that their existence can be established by reference to any of the general discussions of African tribes. The

cally sharply divided from that of the area to the north, that of the Bushman, nor to the East, from that of the southern portion of the East African area. Indeed, in earlier times, the Bushman and Hottentot were to be found much mixed thruout the region south of the 15th parallel South, and west of the 25th degree

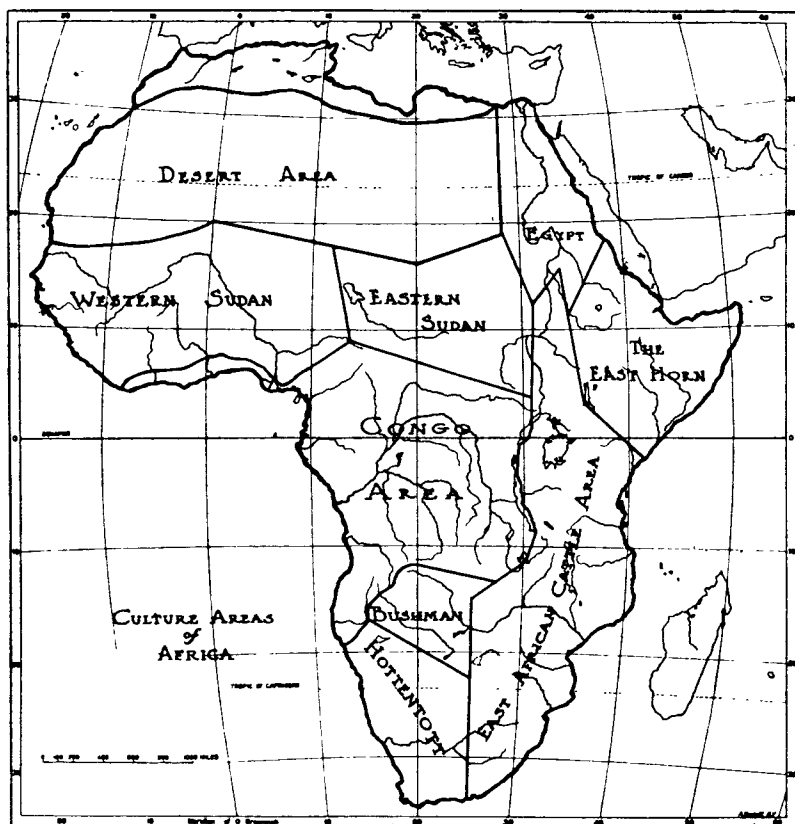


FIG 1.

East longitude, but, since it is recognised that certain concessions may be made in view of the extent to which the culture area is schematic, it has been thought advisable to separate the two on this map. The culture of the Hottentots may be briefly characterised as follows: Cattle play a tremendous part in their lives, so

writer wishes to express his gratitude to Miss Dorothy F. Levy for her assistance in the preparation of the map which accompanies this paper.

much so, that their culture is to be distinguished from that of the East African area by the fact that the cattle are so much more important. The milking and most of the tending of the cattle is done by women, and the animals are the main economic stay of the people. Milk is never drunk soured, but is sometimes even mixed with water, when drunk. Clothing is made out of the hides of the animals, and the choicest food is beef. The meat is cut into long strips, and eaten from one end as the other end is held in the hand. Huts are round, and built of poles with mats thrown over them, and these poles are kept and carried from place to place. The head of the group, the "captain," is usually, the man with the most outstanding personality. Cattle are given to the father of a young woman by a man who wishes her for his wife, but these are in the nature of a present and are eaten when the marriage is consummated. The language of the Hottentots is peculiar to them and to the Bushman, having a stong element of clicks, or sounds made by drawing in the breath. Property, such as they have, is inherited by the eldest son, but there is none of the strict legalistic attitude toward the passing of property as is found to the east. The Hottentot culture is peculiar, again, for the fact that only among these people do we find the use of animals for carrying purposes. The oxen are used to transport the material goods of the family from one place to another, and, since the early observers remark on the custom, it is not to be inferred that this is the result of European influence, although this custom occurs nowhere in East Africa.

Among the *Bushman*, we find a culture that is, on its material side, distinguished from the ones about it by its extreme poverty. These people are completely nomadic hunters,—they have no domesticated animal other than the dog, nor do they indulge in any agriculture, in which they resemble the Hottentots. They are fierce fighters, and their raids on the Hottentot and Bantu herds to the south and east have been remarked on by all European writers. They seek shelter in rock caves which are to be found in the extreme desert country in which they live, and there protect themselves from the elements as best they may. Beef is their choice food, and they obtain it in their raids, driving off the ani-

mals and slaughtering them as soon as they may without danger of immediate pursuit. They have an extensive folk-lore, and the language they speak resembles that of the Hottentots in its use of clicks. They are known for the paintings they make, which are found on the walls of the caves in the Karoo desert, and which take the form of intensively realistic polychrome reproductions of scenes in their lives, the most famous being those of a raid against the Hottentots, in which the relatively small size of the Bushmen raiders is vividly portrayed, and another showing the stalking of an ostrich, in which the characteristic poise of the animal's head is reproduced with much faithfulness. There is some dispute, however, as to when these drawings might have been made. The Bushmen have adopted a rude stringed instrument from their neighbors to the east and north, and they have few others. Their weapons are the bow and arrow and they stalk their game with great cleverness. During the dry season they find water in underground holes, and they know what roots to dig and suck in order to obtain moisture. Perhaps the best description of Bushman life is one given by Bishop Callaway by a Kaffir, and quoted by Ratzel: "The Abatoa are much smaller than the other children of men; they live in high rocks; they have no settled place of abode; their home is wherever they kill game; they eat it all up and go on. . . ."

The *East African Cattle area* is far larger than either of the two discussed above, and may be thought of as one in which the culture is basically agricultural with a cattle culture superimposed upon it. Except in the north, agriculture is engaged in by all the people, and even there one finds agricultural products, produced, however, by groups, which are not allowed to have anything to do with the cattle. In all the area, except, perhaps, in the central portion between Lakes Tanganyika and Nyassa, where the tsetse fly is found in abundance, cattle play the most important rôle in the lives of the people. The milk is used for subsistence, and is usually drunk soured, the method being always to leave some in the gourd so that the new milk will sour rapidly and can be drunk immediately. The cattle are not sacred in the sense that they are worshipped,—indeed, they are prized for economic rather than for

religious reasons. Without cattle, a man may have as many acres of ground, as many hoes and trinkets and aptitudes as he may, but he will not have prestige from them. Only to the owner of cattle can this come. The cattle are, in the north, sometimes tended by women, and occasionally milked by them. This is never permitted in the south of the area, where men only must tend them. Iron-working and sometimes wood-working are specialized pursuits and only men may follow them. In the north, there is an interesting and widespread taboo that prevents people from eating meat and drinking milk at the same time, or indulging in either within some hours of eating vegetable products. Such taboos do not hold among the southern tribes of the area. Among the Banyankole the cattle complex becomes so strong that it dominates the political life of the people and chiefs are appointed to rule over so-and-so many head of cattle, rather than people. In the south, the cattle theoretically belong to the head chief, although this is not always the case. Politically, the tribes of the entire region are closely knit, although not so much so in the south as in the northern portion. There, there are well-defined rules of accession of the dynasties, and, to the northwest of Lake Victoria, we find a ferocity of rule which reminds one of mediæval times in Europe. There is found here also the double court of the king and king's mother, as well as that of his sister, which is found in the Congo area. The Masai and Nandi, in the northeastern part of the area, have warrior age-classes, but these are not found elsewhere. The Zulu organization in the southern portion of the area is a late development patterned after European procedure, but the typical political organization is to be found in the loosely organized tribe, with the real power residing in the headmen of the kraals, or perhaps the chiefs over a group of kraals. The social organization is mainly one of paternal descent,—the man gives a dowry of cattle for his wife, and the children belong to his family unless the dowry is not paid in full, when they belong to the wife's family. Polygamy is generally practised, the richer the man, the more wives he has, as is usually the case. Inheritance goes by careful rules, the usual one being that the eldest son of the first wife takes the major portion of the stock, and the younger

wives of the deceased father, and looks after the younger sisters until they are married. Light is thrown on the importance of cattle by a Zulu custom that the position of a child in the community and in the family is definitely determined by the source of the cattle which were given for his mother. All the people in the area practise agriculture, as has been said, and the land is held by the chief, usually, in trust for the people. Once land is granted to a man for use, it cannot be alienated,—there is, of course, no sale of land. Grazing land is unrestricted. The houses of the people are, in the southern and western portions of the area, round thatched huts, but among the Masai and the Nandi they are built of mud, and are rectangular in shape. The central unit is usually the kraal, where the cattle are kept. The women in the main work the fields and do the housework. The religion of this region is mainly ancestor worship, although there is some fetichism present. A strong characteristic of the entire area, which, however, is not peculiar to it, is the strong legalistic bias shown in all dealings between individuals. The language, except in the northeast, is Bantu. The clothing in the south and northeast is leather, in the main, while in the northwest barkcloth is largely used.

The Congo area is divided from the East African sharply by the line of 60 inch rainfall; and we get a very sharp differentiation of culture. The area has been mapped by Leo Frobenius (*Ursprung der afrikanischen Kulturen*), who has shown that in such diverse elements as the types of shields, dress, bows, houses, masks, human representations, pipes, tattooing, ornamentation, stringed instruments, wooden drums, knives, and the extensive use of the banana, the region mapped as the Congo area differs markedly from those surrounding it. However, there are other points on which he has not elaborated the area, and which will be mentioned here. The economic organization differs markedly from that to the south and east, although not so much from that to the north, which has been strongly influenced by the Congo, as will be shown. Here we have a closely knit system of markets, the like of which is not seen in the areas already considered. The iron hoe is generally the unit of value, although sometimes the barkcloth or the cowrie shell is used; the entire absence of cattle makes most of the

customs which most strongly characterize the East African area impossible here. There is a similar buying in marriage—a custom, however, not restricted to Africa—the unit involved is the hoe or cowrie rather than the cow, and the position of the women is much better than in East Africa or in the Mohammedan-influenced countries. The main economic pursuits are agriculture and often fishing, and hunting, and the domestic animals which the people have are the goat, pig, dog, chicken, in the main. The markets, which have been remarked on, are held at regular intervals, and there is a brisk trading in cowries, iron hoes, agricultural products, basketry, iron products, and the like. The political unit is usually the village group, which is ordinarily sedentary and lives in rectangular houses facing on a sort of street. The head of a group of villages is usually the ruler, and the office passes from father to son, the queen-mother, however, having her court in the central portion of the area. Property is usually inherited from father to son, and we sometimes find that this property includes such articles as trees growing on land which may have been relinquished some time before. Land is usually owned *en bloc* by a village, each member of which may use as much of his village's band as he needs. Boundaries are well known, and trespassing is not tolerated. The religion which prevails is fetichism, and an outgrowth of this is seen in the unique wood-carving which has come to be admired so generally. The masks which Frobenius mentions are typical for this region. Iron- and wood-working are done by specialists, as in East Africa, and the wood-workers often occupy places of honor in their communities. Other art products found only here are the embroidered raphia fabric, and the delicate basketry. In the Congo basin the language which prevails is Bantu, but along the arm which extends to the west the languages which are spoken to the north of it,—Ibo, Fanti and others, are spoken. This arm may be briefly mentioned. There may be some objection to including it in the Congo area, but it is felt that it is sufficiently like the interior in the cultural characteristics mentioned above, and enough unlike the Western Sudan, to justify its inclusion. It is not denied that detailed investigation may over-

throw this position, which is assumed largely on the basis of Frobenius' work already mentioned.

Another area may be discerned in the *East Horn*, although its characteristics are far from being as sharply defined with reference to its neighbors as is the case with the areas already mentioned. Indeed, this will be found to be true of the remaining areas, and their description is difficult in the extreme since their cultures are the result of such recent interplay of historical forces from the Mohammedan North and the Negro south that the lines drawn between them are vague and shifting and the exceptions numerous. However, the division of Northern Africa into areas is felt to be quite possible, and will be attempted. The East Horn comprises the projection of the continent into the Indian Ocean which reaches from the equator north to about the 15th parallel, and inland to about the 38th degree latitude East. The principal peoples who occupy it are the Galla and Somali, a large section in the interior being occupied by the kingdom of Abyssinia. The Somali live along the coast, the Galla inland. The former are mainly herders, having numerous animals such as the camel, cow, goat, sheep, and others. Along the coast proper there are towns engaged in commerce, and the townspeople and the herders do not readily mix. The Galla are also largely a herding people. Their culture is difficult to distinguish, in the south of the area, from that of the Masai and the Nandi of the East African area,—indeed, we have here an excellent example of the way in which cultures tend to shade into one another. However, as we go north, we find that agriculture is again present. The social organization is influenced by Islam, but there are age groups as among the Masai which rotate in power and comprise the warriors. There is a class of iron-workers, who, however, are regarded as pariahs, and who keep strictly to themselves, not being allowed to mingle or intermarry with the dominant Galla. The women tend the cattle and milk them; the camels are tended by men only, and are prized for their milk. Marriage is effected by the giving of a dowry of various animals, as in other portions of Africa. The property of the father goes to his eldest son, and this son becomes the head of the family, being responsible for his sisters and younger brothers,

who do not inherit anything. From the coast, there has been much contact with Europeans and Arabs, while the raids of the Masai from the south have brought in many influences from that direction.

The *Eastern Sudan* is, as has been remarked, a marginal area. The language of the people living there is Arabic; the religion, the Mohammedan. The geographical character of the region is pronounced desert, and the occupation of the people, which is largely herding, is influenced greatly by this fact, as they are forced to keep on the move the greater portion of the year in order to find sufficient water and food for their animals. There also we find a much greater profusion of domestic animals than to the south. In the East African area, we found only the cow, sheep, goat, dog, and smaller animals. This region is, however, the breeding-ground of the camel and the horse, and the cow plays a very insignificant rôle in comparison. There are few studies on which to base a description of the area, but a detailed account of the Kâbabish is at hand, and may be drawn on for data. These people are nomadic, and their social organization is completely paternal, as might be expected from the Islamitic influence on their culture. The head of the group is the sheikh, and he controls its movements. As soon as the dry season begins, they move north, and the camels are sent farther than the rest of the animals, which are left at the watering-hole. The milk of the camel is a large element of sustenance,—indeed, the camel plays a part highly analagous to that played by the cow to the south. It is this animal that is given in payment of the dowry before marriage, and it is the beast of burden par excellence. Once at the watering place a trough is dug, and the animals are watered at stated periods. The people live in tents, as might be expected from their nomadic character. Their clothing is cloth, not leather, and is much the same as is worn by the Berbers. During the rainy season the families in the group scatter so that the animals may graze more satisfactorily.

The *Western Sudan* is again the ground of the conflict between the Negro influence to the south and the Mohammedan to the north. The Mohammedan religion has been accepted largely all through this region, but the intense political organization that

characterizes it never gave way before the invaders to any great extent. For this is a region of great kingdoms,—Dahomy, Benin, Ashanti, Haussa, Bornu, Yoruba. They were closely-knit empires, with cities numbering thousands, and well organized governments which controlled the outlying regions. The ruler was the king, and the succession went from father to son in long dynasties. Characteristic of this region were the secret societies which Frobenius has described so vividly, and which so largely and efficiently controlled political events in the towns. The basic economic life consisted in agriculture, herding, and in trade, and we find here the same markets we found to the south. It is true that some of the kingdoms stretched to the coast, and it may again be objected that the projection from the Congo is unjustified on the accompanying map, but it is to be noted, that in these outlying regions the effect of the dominant civilization in the interior was weakest, and the culture resembles much more that of the Congo than of the north. The languages spoken in this region were diverse, each kingdom having its own. Perhaps the outstanding feature of the culture of this area is its art work. The terra cotta produced in this region has long been famous, and stone and iron was worked as well, the latter with especially great skill. Weaving was also beautifully done. The chief characteristics of the religion, where it is not Mohammedan, is its fetichism.

The remaining two areas which have been marked on the map may be briefly mentioned. The *Desert* area is inhabited chiefly by Berbers, who are nomadic, and whose chief occupation is camel and horse raising and transportation. The region is even more marginal than that to the south, but it points mainly to the north for its influences, although there have undoubtedly been some from the south. Of *Egypt* only a word may be said; it comprises a specialty in itself, and to attempt to describe its bewilderingly complex civilization here would only be presumptuous. Nor does it need description to support the assertion that it constituted a culture area in itself; further, its influences have been felt throughout the rest of the continent.

Thus, we see that an attempt to apply the concept of the culture area to the African data demonstrates that this is quite

feasible, and gives results that cannot but be of value in the study of the cultures of the continent. The student is handicapped, when one compares the available studies of African peoples with those which exist of Indian tribes, by the scantiness of the data, and by the fact that by far the greater amount has been collected and published by persons who were not trained ethnologists. However, by a judicious utilization of such sources as are available, one can check the accounts of the various reporters, and thus obtain a fairly clear account of the cultural conditions in any given region. By thus dividing the continent, more or less arbitrarily, it must again be admitted, into the nine areas sketched in this paper, it will be found that the chaos a study of Africa ordinarily presents is greatly reduced. It is hoped that this attempt will be followed by more detailed investigations tending to establish more definitely the correctness with which the present boundary lines have been drawn, and thereby to throw more light on the cultural situation in Africa and eventually on the historical relationships between the various regions which, to the present, have appeared so difficult and baffling.

COLUMBIA UNIVERSITY

ZUÑI WEAVING TECHNIQUE

By LESLIE SPIER

THE following notes were made at the Pueblo of Zuñi, New Mexico, in 1916. As there now appears little prospect of adding to them, they are offered in this incomplete form.¹

PREPARATION OF YARN

Cotton was raised for textiles in the girlhood of my informant, a woman of sixty. There may even be a few plants still growing in the gardens about the pueblo. Casteñada reported however that "they do not raise cotton, but bring it from Totontec" (the Hopi pueblos.²) The cotton seed was planted in holes about one and a half inches deep and covered with white sand. The garden patches are divided into sections about a foot square by little dirt borders to make watering by hand easier. The seed was watered for the three days following planting, but during the next three days received no water. This alternation continued until the cotton was ripe. The plant received no other attention, "like tomatoes." The seed was planted during the month Ce'omeyacun (July), and was ripe "when the corn was old," in the month Tlitekwiatsanna (September).

The harvested cotton bolls were broken open and seeds and sand removed by hand. The fibers were picked over and straightened somewhat with the fingers, the snarls and imperfect fibers being removed. The fiber was not washed for "it was already white." It was carded on commercial wool cards. (The aboriginal tool for this purpose, if any, is unknown.) From this point on the treatment of the fiber was identical with that now used for wool.

While Mrs. Stevenson noted the use of milkweed fiber in weaving certain garments, my informant denied its use.³ Neither

¹ Published by permission of the American Museum of Natural History.

² George Parker Winship. *The Coronado Expedition, 1540-1542*, (Fourteenth Annual Report, Bureau of American Ethnology, part 1, 550, 1896).

³ Matilda Cox Stevenson. *Ethnobotany of the Zuñi Indians* (Thirtieth Annual Report of the Bureau of American Ethnology, 77, 1915).

horse nor goat hair is used in weaving. A fiber is obtained from both the broad and narrow-leafed varieties of yucca. The centrally located leaves of the plant are folded into convenient sized lengths, four or five inches, and tied in this position. These bundles are then boiled, white wood ashes being added ("any kind," but cedar is in general use for cooking). The leaves are removed when sufficiently softened. When cool they are drawn between the teeth, the fibers being thus separated by chewing and scraping. These fibers, which are stored in bundles, are softened before use by soaking in water. They are rolled into rope on the thigh, or spun into yarn with the aid of the usual type of spindle.⁴

Wool yarn is used for blankets, dresses and occasionally for belts. The sheep are clipped by men, but further stages in the preparation of yarn are in the hands of women. The raw wool is washed in cold water alone, usually the river. One informant said either hot or cold water might be used. Tangles and dirt are picked out by hand and the fiber straightened somewhat by gently pulling out little tufts. It is carded on commercial cards. The desired color is obtained by mixing fiber of various colors on the card, e.g., gray from white and black fibers. The laps of wool are sometimes formed into a roving by the fingers, draft and twist being given by rolling on the thigh, and eventually they are twisted into a yarn on the spindle.

The spindle is a cylindrical shaft about eighteen inches in length and a quarter inch in diameter, with a wooden whorl, a circular disk from three to four inches in diameter.⁵ The spindle shaft is quite smooth with its lower end rounded and its upper end either rounded or pointed. The spindle is thrust through a lap of wool, then while the lap is held in a fixed position the spindle is revolved about the lap as an axis. The twist which results fastens the lap in the middle of the spindle. The fiber is now ready to be spun into yarn by either of two methods.

⁴ This description is identical with that obtained by Mrs. Stevenson, loc. cit., 78.

⁵ Mrs. Stevenson notes that "the spindle had no whorl, nor were any of the more ancient spindles furnished with whorls" (loc. cit., 77,) yet in her earlier report whorls of wood or stone are mentioned (The Zuni Indians: Twenty-third Annual Report of the Bureau of American Ethnology, 372, 1904).

In the first method the spindle is spun on a support, usually the floor. While the left hand feeds in the roving and gives draft to the yarn, the right turns the spindle and guiding the yarn at the tip of the spindle, gives it twist.

The spinner is seated on the floor in the alternative method, sitting on her doubled-up left leg and resting on the right knee. In this posture the right thigh is thrust forward. The roving is started as in the first method, then with the spindle almost horizontal, its lower portion resting on the right thigh and its upper end suspended from the left hand by the roving, it is rolled up along the right thigh and kept spinning by the right hand. At the same time draft is given by the weight of the spindle and by gentle jerks of the left hand feeding the roving. By a combination of the methods after rolling the spindle on the thigh, the lower end is allowed to slide to the floor where it continues to spin. The spindle is thus partly suspended by the yarn and partly supported by the floor.

The draft and twist given the yarn depend on the use for which it is intended. For blankets a soft fluffy yarn of three-sixteenths to a quarter of an inch diameter is used. To obtain the tighter twists the yarn is often re-spun on the same or other spindles.

Further twist may also be given while the first spinning is in progress. The lower end of the spindle is wedged between the spinner's right foot and the floor, with its upper end pointing away from the spinner.⁶ The left hand stretches the yarn while the right works out kinks from the spindle up to the free end. The slack yarn is then reeled in between the first and fourth fingers of the left hand. Spinning again proceeds with the left hand feeding out the partially completed yarn.

Finished yarn is rolled into balls a few inches in diameter to await weaving.

WEAVING DRESS FABRIC

The warp is prepared on a frame consisting of two squared side bars and two round end bars. The side bars measure an inch

⁶ This process in use by a Hopi is shown by James Stevenson. Collections Obtained From the Pueblos (Third Annual Report, Bureau of Ethnology, 1884, plate XLIV).

and a half by three inches in thickness; the end bars are an inch and a quarter in diameter. The tips of the end bars are sometimes nipple-shaped to fit into corresponding mortises. The frame is adjustable, the side bars having holes and notches cut in them so that the end bars may be set at the proper distance to give the required length of warp when the yarn is stretched.

The yarn is tied to one end bar, then unrolled from the ball over and over the end bars until the required width of warp is obtained. The side bars are then removed and the end bars replaced by loom strings. The ends of these strings are fastened

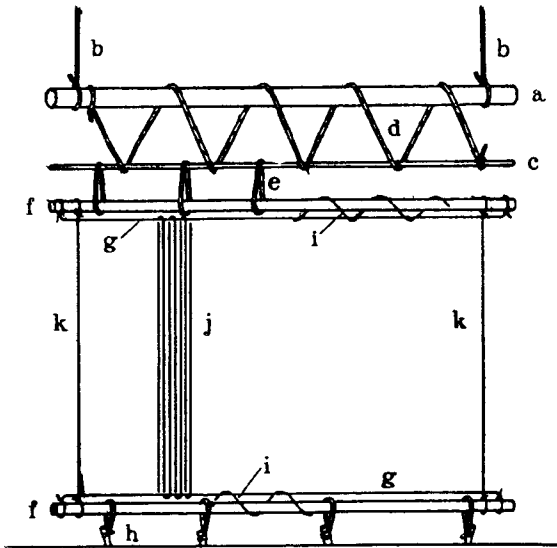


FIG. 2.—Diagram of Loom

to the round bars, which figure hereafter as the loom bars. The loom string is further bound to the loom bar by a cord running around both bar and string, passing between the warps. At each side of the warp an additional group of three warps is added, being tied directly to the loom bars. The heald rods are next fastened to the warp. When these are temporarily tied together the loom bars, warp, and healds may be lifted about together.

The loom in general use for weaving dress goods or blankets is sometimes stretched in a rectangular frame but is more frequently hung between ceiling and floor. In the latter case the place of the

frame is taken by a stout beam, four inches in diameter, suspended by ropes from the rafters (a and b, Fig. 2) and by pegs driven into the floor (h). The mechanism for regulating the tension on the warp and the position of the web relative to the floor consists of a bar (c), one inch in diameter, suspended from the beam (a) by a rope (d) passing many times around both. The warp may be tightened by taking up the slack in this rope, or by letting it out the portion of the warp being worked on may be kept at a convenient height above the floor on which the weaver sits.

The upper loom bar with the warp attached is now slung from the tension bar by a series of loops (e) while similar loops hold the lower loom bar to the pegs in the floor.

As the loom now stands the warp (j) is stretched over the loom strings (g) which are tied to the loom bars (f) at each end and tightly bound thereto by a string (i). An additional warp element (k), made up of two or more strands, is tied independently and stretches between the loom bars at each side of the warp.

So much of the loom is common to all dress and blanket weaving. Variations appear in the character of the yarns, the arrangement of the heald rods, and the manipulation.

The warp is about four and a half feet wide in a typical loom on which twilled dress fabric is being woven. Both the loom strings and edge warp elements are three strands. Four wooden heald rods, a quarter inch in diameter, are used. The uppermost rod (called the free rod) passes between alternate pairs of warps. The three other rods are attached to warps in such a way as to pick up alternate pairs. A string running loosely around each rod forms a series of loops within which the warps are caught. The arrangement is as follows:

Free rod (uppermost)-(in front)	Warps 1; 4, 5; 8, 9; etc.
First heald (second highest)-(in loops)	1, 2; 5, 6; 9, 10; etc.
Second " (third ")-(" ")	2, 3; 6, 7; 10, 11; etc.
Third " (lowest) (" ")	3, 4; 7, 8; 11, 12; etc.

The three strand edge warps are independent of these rods.

Warp and weft are black woolen yarn and as both have about the same degree of tension they show equally in the finished product. Although both yarns are said to be from the same ball,

the warp appears to be somewhat thinner and somewhat more tightly twisted than the weft. This may be due to slightly greater tension on the warp.

Two bobbins with weft yarn are used. These are wooden rods, a quarter inch in diameter and twenty-two inches long, with a shallow groove near each end to keep the yarn from slipping off. The yarn is wound lengthwise on the bobbin, crossing from side to side, and with an extra loop around each end.

Manipulation. Picks of wefts are delivered in six inch lengths. A supplementary quarter-inch rod is thrust through the warps above the heald rods to form a temporary shed after the free rod has been raised. A pointed instrument is struck across the warps to shake them free from one another. To form the shed the weave sword is inserted between the warps beginning at the point where the last delivered pick ended. (The sword is a smooth stick, two feet or more long, an inch and a half wide, and three-sixteenths inch thick, with rounded edges). The sword is beaten down on the weft below and again is turned crosswise to form a shed. The requisite length of weft is released from the first bobbin before picking. The bobbin is then thrown bodily through the shed and the new pick is beaten down with the sword.

The supplementary rod is withdrawn and replaced after the first heald is raised. This time the other bobbin is thrown through the shed.

Weaving from left to right the sheds are formed by the free rod and the first heald, two wefts being carried forward at the same time. In the reverse direction the second and third healds are similarly raised in sequence. This produces simple twilling.

At the edge each weft passes around one thread of the three strand edge warp before being brought back into the web. It is arranged that one weft passes successively around the first and third strands, the other around the second and first, and so on.

In this manner six inches of web are completed at the bottom of the loom. The entire web attached to the loom bars is then turned over so that this completed part will be at the top of the loom. Weaving is begun again at the bottom. This reversal of the loom seems to necessitate the substitution of the third and

second healds for the free and first rods respectively when weaving from left to right and vice versa.

Inasmuch as the weaver sits on the floor the uncompleted portion of the web must be brought down within convenient reach. This can be done by letting out the tension rope (d, Fig. 2). The previously completed fell of cloth is shortened by joining its upper and lower edges by a cord sewn in with a running stitch. The surplus cloth falls back of the lower loom bar.

As weaving progresses the area of unpicked warp between the upper and lower woven portions becomes so narrow that the bobbins cannot pass. The heald rods are then removed and shedding is effected by separating the warps into proper groups and picking with the fingers. The final picks are put in with a commercial darning needle worked through the warps.

Wooden combs are used to adjust the picks. These are about six inches long, one end cut into five to eight teeth, the other sometimes pointed. The comb is used to press down the pick between the warps; the pointed end to adjust its regularity.

DRESS FABRIC WITH DIAMOND SELF-PATTERN

The woman's dress is an uncut black cloth, with an upper and lower border, about seven inches wide, of dark blue and showing a diamond shaped self-pattern. The black warp is native wool yarn, while of the wefts, the black is native but the blue is commercial yarn.

The form of the loom is that described above. The loom strings are in some cases two strands or three, the edge warps three or four. The four healds hold the warps as shown in the following schedule:

Free rod (in front)-Warps 4, 5; 8, 9; 13, 14; 17, 18; 22, 23; etc.

First heald (in loops)-2; 5, 6; 9, 10; 12, 13; 16, 17; repeat 20; etc.

Second heald (in loops)-1, 2, 3; 6, 7; repeat 10, 11, 12; etc.

Third heald (in loops)-3, 4; 7, 8; 11; 14, 15; 18, 19; repeat 21, 22; etc.

Thus the first and third heald rods are paired, the free rod and second heald.

It appears from the pattern figure (Fig. 3) that in grouping the warps while on the warping frame they were probably tied

Beginning at the bottom of the figure and weaving from right to left, the first heald is raised and the first bobbin thrown, then the free rod is raised and the second bobbin thrown. Then weaving from left to right, the third heald is raised and the first bobbin thrown, then the second heald and the second bobbin, and so on. In turning back into the web at the edge the bobbins pass through the strands of the additional warp, as described above.

The first heald is raised. A temporary shed is formed with a supplementary rod thrust through the warps just above the healds. The sword beats down hard on the last delivered pick. It is then turned crosswise to form a shed below the healds. The requisite length of yarn (about six inches) is released from one bobbin. The bobbin is thrown. The pick, which lies very slack, is pushed down with a weave dagger to the previous pick at points about an inch apart. This pick will be beaten down when the procedure is repeated during the delivery of the pick next above. This is slack weaving, the warps being under tension and the weft delivered very slack.

When the dress fabric is removed from the loom the loom string is found to form an attractive edging. Tension of the warps on the string causes it to sag from the loom bar between the points where the binding string held it close to the bar. The completion of the web makes the resulting scallops a permanent feature of the loom string.

The natural tendency is to narrow the web midway up the loom. To obviate this a stick, an inch wide, is sewed at each end to the web at its upper margin. Another type of stiffener is a similar stick bound with cord near each end. A pointed twig thrust through the fabric and inward under this binding serves to hold the fabric fast to the rod.

BLANKET WEAVING

The blanket loom is identical with that used for weaving dress fabrics. Commonly the loom string is two-ply on which a warp of commercial cord is strung. The additional edge warps are two strands of cord. The weft however is a soft fluffy native yarn, fully a quarter inch in diameter. The warp being under

tension and the weft delivered very slack, the warp is completely hidden in the finished product. The weaving is of plain rectangular type: two heald rods are used, alternate warps are tied to one, the other merely passes under the other set.⁸ However, the last single warps at the edges, i.e., those next the additional two strand warps, are not caught in the loops. No bobbin is used in weaving such blankets.

Manipulation. The free rod is brought down to the heald, i.e., raised. A shed is formed by turning the sword sidewise. A length of weft slightly greater than the width of warps is broken from the ball of yarn. This is carried through the shed with the fingers and picked very slack for about a foot at a time. The sword beats down. The surplus weft at the edges is turned back into the fell. This is repeated using the heald rod.

When the blanket is half completed it is reversed in the loom and weaving proceeds again from the bottom upward. The last picks are drawn in without the aid of the heald rods.

Weft picks forming the pattern—a series of transverse lines different in color from the body of the fabric—are re-adjusted to a true horizontal position with the aid of a pointed tool.

In some blankets there are designs consisting of a series of isolated rectangles of solid color. A length of body-color weft is broken from the ball of yarn and picked in up to the design area. A length of design-color weft is picked in, and so on. In each case the successive wefts are turned about the warp at the edge of the design area and brought back into the fell in order to lock the fabric.

While the position of the free rod is usually above the heald, in some blanket looms it is below.

Sixteen inches had been woven on one loom examined (three feet wide) in three days of intermittent labor.

⁸ There is a coarsely woven saddle blanket in the Museum of Anthropology, University of California, bearing a lozenge-pattern. This was evidently woven with healds like the dress goods, but there are many irregularities, showing that the sequence was not strictly adhered to.

WEAVING BELTS

The weaving of belts is distinct from weaving blankets and dress fabric. While the latter are made by the manipulation of weft on a foundation of warp, the belts are made by the manipulation of warp with the insertion of weft as a binder or filler.

Some belts are made by a process of tubular weaving.⁹ The warp is prepared on the adjustable frame described above; the warp being wound over and over the end bars. No loom strings are used in this type of weaving: the side bars of the frame are removed and the round end bars with the warp strung on them are

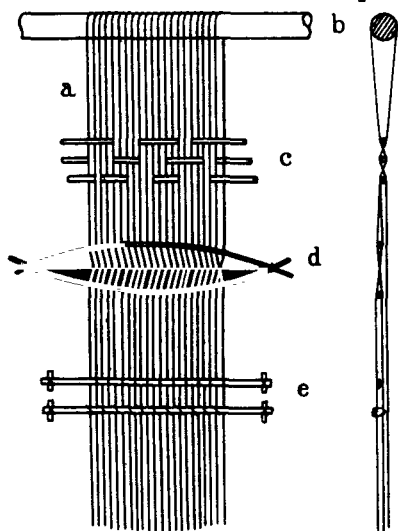


FIG. 4.—Diagram of Loom for Belt Weaving

set in the loom as loom bars. The warp running continuously over these bars may be pulled over them as over rollers. As the weaving proceeds upward on the anterior warps, the warp is pulled down to a height convenient to the weaver seated on the floor. The resulting fabric is a tube, perhaps eight or ten feet in circumference but only three to five inches in length, i.e., the width of the belt.

⁹ The tubular weaving of belts and the weaving on belt-looms should not be confused. Belt looms and their manipulation will be described later.

Washington Matthews found no tubular belt weaving among the Zuni (loc. cit., 390).

The belts consist uniformly of a series of longitudinal bands of various colors placed symmetrically about the median line of the belt. The area containing the design is the middle panel. Commercial yarns are used for the warp for the most part. Warps of each color are placed in proper position on the warping frame. For the central area containing the design, warps of both the ground and design colors are placed over the same part of the frame, giving two sets of warps. The completed belt is finished on both faces; on the back the design appears in the reverse color combination.

The loom is of simple construction (Fig. 4). The warp (a) is stretched directly on the loom bars (b) which are either suspended in a frame or between floor and rafters. To prevent the warp slipping around the loom bars when beating up, the warps to the rear of the loom bars are brought up to the anterior set and caught by thrusting three little rods through the combined warps as a locking device (c). A cruder device for the same purpose is a cloth bound tightly around the entire warp as close as possible to the lower loom bar.

Inasmuch as the warps are merely laid on the loom bars and held there only by tension, a device is necessary to prevent one warp slipping over another while the loom is being adjusted. For this purpose the anterior warps are divided into two sets and locked by two flexible rods tied together at the ends and bowed by a cord connecting the ends (d). A simpler device consists of two stiff rods similarly placed and bound rigidly together at the ends. This also gives a starting-place to pick in the first wefts.

Only two heald rods are used: one is free; alternate warps are fastened in the loops of the other. Both pass through only the anterior set of warps. In one case short cross-pieces were fastened by a half-lap and cord binding near the ends of the healds to keep them from coming out of the warps (e). The special sheds needed to form the design are groups of warps picked up with the fingers.

Usually a little bundle of weft is thrown, but sometimes a small stick on which the weft has been wound serves as a bobbin.

Manipulation. The heald rod is raised. A pointed tool struck across the warps frees them from one another. The sword beats

down on the previously delivered pick. The warps in the central design area are parted into proper groups for the design, warps of both ground and design colors being selected. The sword is thrust crosswise through these to hold the shed. The bobbin or bundle is thrown under tension. The pick is beaten down with the sword. It will be noted that while the heald rod forms the shed for the side stripes, the ever varying shed in the design area is formed with the fingers and sword.

The weft is completely covered by warp and does not show in the finished fabric (except in certain designs). It serves merely as a binder or filler.

No mechanical shedding device is used to produce the figure: the growing design is kept in view on the front of the loom. No patterns are in use that I could learn, the design being kept in mind during weaving. Several straight lines are woven completely across the middle panel when beginning or ending the design. Weaving is complete when all but about a foot of warp has been picked. The unpicked warp is cut in two, leaving an ornamental fringe at each end.

Inasmuch as there is no mechanical shedding device used, mistakes in the design may occur. I noted that slight mistakes are either recognized as such and ignored, or the proper heald being raised the incorrect pick is withdrawn and then correctly replaced. I also noted that familiarity with a design does not imply ability to weave it. In one case the sister of an absent weaver undertook to demonstrate weaving of this type. In spite of the simplicity of the design which could be copied from the already finished portion, she could not continue with the weaving.

BELT LOOM WEAVING

Belts and head bands are also woven on belt looms. In this the warps are strung between some convenient support, such as a hook in the wall, and the weaver's girdle. The warp is manipulated by means of a reed. Belt loom weaving may be losing ground to belt weaving on upright looms. At least I judge so from the slightly contemptuous attitude toward the use of belt looms and the carelessness in storing the reeds.

Warp for the belt loom is prepared on two stakes driven into the floor at the required distance. One informant stated that this should be twice the length of the outstretched arms. The yarn is wound over the stakes, passing alternately through a hole in the reed and through the adjacent slit.

My Zuñi informant said any stakes might be used, but from an old Hopi man, resident at Zuñi from childhood, I secured two prepared stakes which he insisted were Zuñi. (He further stated that belt looms are not used in the Hopi pueblos, belts being woven on upright looms.)

The weaver is seated on the floor with one end fastened to a convenient support level with her shoulders,¹⁰ or to a stick resting against her soles, according to Mason.¹¹ The other end is either fastened directly to her belt, as in the case of the short headbands, or to a belt stick. The belt stick (Fig. 5) is held in front of the weaver's girdle by a cord around her waist. As weaving proceeds the fell of completed cloth is rolled around this stick and pinned to itself to prevent unrolling.

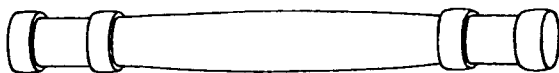


FIG. 5.—Belt Stick (A.M.N.H. 50.1-8841; 27 cm. long.)

The reed varies from twelve to thirty inches in length. It is made of two longitudinal flat rods between which many parallel splints, five to seven inches long, are transversely tied. A hole is pierced through the middle of each cross-splint.¹² Alternate warps pass through these holes, the others through the spaces between the splints.

Only a few of the many reeds seen were marked for warp grouping. The most frequent mark was a colored splint. According

¹⁰ Illustrated by Matthews, Pl. XXXVII and by Stevenson: *The Zuñi Indians*, Pl. XCIV.

¹¹ Otis Tufton Mason: *A Primitive Frame for Weaving Narrow Fabrics* (United States National Museum Report for 1899, Pl. I, 492, 1901). A similar method of holding the warps by children learning to weave is shown by Stevenson (*The Zuñi Indians*, Pl. LXXVIII).

¹² Illustrated by Matthews, fig. 58, and Mason, figs. 17 and 18.

to informants this marked the boundary of two color areas, but I am not certain of this. They uniformly expressed surprise at a reed obtained from a Zuni woman which had groups of splints variously colored and denied the general use of such a device.

Manipulation. A shed is formed by raising the reed, the fingers giving active assistance in separating the warps. Warps from both the upper and lower sheds are selected and divided with the fingers into proper groups for the design. The sword (about the shape and size of a butcher knife¹³) is beaten down on the last delivered pick. A shed is formed by turning the sword crosswise. The weft is thrown. (No bobbin, but a small bundle of yarn is used.) The pick is beaten down with the edge of the hand and the sword. When the reed is thrust down to interchange the position of the sheds, the operation is repeated.

Warp tension is effected of course by the pull of the weaver's body. The weft is delivered under tension, so that it does not show in the finished belt unless it is intended to form part of the design. Like the weaving of belts on the upright loom this weaving is done by warp manipulation, the weft merely forming a binder or foundation.

The weft is not always delivered entirely across the warp. When the design necessitates it, weft is used to fill in the design unit, crossing only those warps used in that part of the design. Since the warps are not joined at the borders of the design area, it is obvious that this cannot be continued indefinitely: the weft must be picked entirely across the warp at frequent intervals.

MEN AS WEAVERS

I have referred above (p. 76) to the inability of one woman to weave a belt design although she must have had exceptional opportunities to become familiar with the loom. I was also interested to learn what men might know of this sex-limited technique. The question is of particular interest inasmuch as there is evidence that the men, not the women, wove at the time of the Conquest.¹⁴

¹³ Illustrated by Mason, loc. cit., Pl. 9.

¹⁴ Winship, 550.

I found no men who were weaving or who had woven, yet several blankets were purchased which were said to have been woven by old men.¹⁵ I do not believe that this information was manufactured for my benefit, as the blankets were secured in the ordinary course of collecting. I am not certain that the men referred to were not Hopi residents of Zuñi.

The men appear to have considerable knowledge of all types of weaving. Replies to inquiries as to the details of technique would come quite as often from the men present as from the women. The response would often take the form of a demonstration, in which a facility in manipulation was displayed far in advance of what might be expected of mere spectators. These demonstrations were for the most part of spinning. They handled the spindle and yarn with all the characteristic movements and technical tricks of the skilled worker. Questions dealing with the sequence of movements in the loom, the character of wefting to produce desired results, and the general mode of procedure in the case of the loom itself were correctly answered by the men, although none of the men offered to sit down and weave. I do not know whether the men could stretch the warp and arrange the healds, but they seemed familiar with the process. Again, the men knew how cotton was raised although it was grown in gardens tended by women alone. Incidentally, I believe that these answers were given by the men only because they were less shy toward a stranger.

It is interesting to note the Zuñi attitude toward Hopi weavers resident at Zuñi. The usual attitude was matter-of-fact: they did not look askance at these men weavers: this was no matter of "woman's work." This attitude seems to be something more than recognition of the fact that in the Hopi pueblos men weave.

COMPARATIVE NOTES

There are surprisingly few published accounts of Southwestern weaving. Without doubt all the Pueblos wove, but I have

¹⁵ Mrs. Stevenson cites a boy weaving in 1881 and a priest in 1902 (*The Zuñi Indians*, 372). Dr. Parsons informs me that one of her men informants was named Big (i e., great) Weaver.

not been able to find records of even that fact. These notes are based only on the more obvious sources.

Cotton was grown by the Hopi, by the Tewa in small quantities at the time of discovery, with the possible exception of Pecos and Taos, by the Pima, Maricopa, Western Apache, Havasupai and Tepehuanes.¹⁶ It was not grown by the Navaho, nor at Zuñi, Acoma, and the Tano pueblos at the time of the Conquest, Bandelier implies.¹⁷

The Hopi and Pima freed the cotton of seeds by whipping it with switches. The Navaho wash the wool with hot water and yucca root. Nowhere is a primitive carding tool described, but the Navaho are credited with using teasels.¹⁸

Zuñi women spin; so do the Pima, although there the men weave. Hopi men spin as well as weave.¹⁹

Loom weaving is credited to the following Southwestern tribes: Zuñi, Hopi, Acoma, Santa Clara, Nambe, Cochiti, Navaho,²⁰ Pima, Papago, Maricopa,²¹ Tepehuanes,²² Opata, Tarahumare,

¹⁶ Ives (1858) cited by L. Lewton, *The Cotton of the Hopi Indians: A New Species of Gossypium*, (Smiths. Misc. Coll., 60, 1912, 4); W. Hough, *The Hopi Indians*, 1915, 85. Tovar stated that the Hopi did not weave cotton cloth (F. S. Curtis, *North American Indian*, xii, 1922, 7) W. W. Robbins, J. P. Harrington, and B. Freire-Marreco, *Ethnobotany of the Tewa Indians*, (Bull. 55, B. A. E., 1916, 76, 102, 103). A. F. Bandelier states that it was not grown on the Rio Grande north of Cochiti (Final Report on Investigations among the Indians of Southwestern United States, etc., Papers, Arch. Inst. Amer., American Series, iii, part 1, 37). Padre Font (1775), Whipple (1852), and Bartlett (1854) cited by Lewton, 4; F. Russell, *The Pima Indians* (26th Ann. Rept., B. A. E., 1908, 148); Curtis, ii, 1908, 5. A. Hrdlička: *Maricopa Weaving* (Amer. Anthropol., n.s., 7, 1905, 361). A. W. Whipple, Thomas Ewbank, and Wm. W. Turner, *Report Upon the Indian Tribes* (Pacific Railway Repts., III, 14, 1856). Bandelier, 93.

¹⁷ Matthews, 375; Bandelier, 176, 37, 157.

¹⁸ Hough, 85; Russell, 148. P. E. Goddard, *Navajo Blankets* (Amer. Mus. Journal, x, 1910, 205); Franciscan Fathers, *An Ethnologic Dictionary of the Navaho Language*, (Saint Michaels, Arizona, 224, 1910). G. W. James, *Indian Blankets and their Makers*, (Chicago, 109, 1914).

¹⁹ Russell, 150. Curtis, xii, 51.

²⁰ Hough, 82; Lewton, 5. Note that Tovar stated that they did not weave (Curtis, xii, 7.) A woman's dress (2-10764) from Acoma is in the Museum of Anthropology, University of California. Robbins, Harrington, and Freire-Marreco, 103. Bandelier, cited by Matthews, 391. Matthews et al.

²¹ Russell, 148; Curtis, ii, 6, 111. Hrdlička, 361; Curtis, (ii, 82, 116,) states that the Maricopa learned to weave cotton cloth from the Pima.

²² Bandelier, 93

Yaqui, Mayo, Cora,²³ and Huichol.²⁴ Undoubtedly other Rio Grande Pueblos should be added, but references to weaving among them remain obscure. These groups mark the northern limits of loom weaving in the historic period. Presumably the Navaho did no weaving in the days of the Conquest.²⁵ It does not occur among the Havasupai and Diegueño, and probably not in any other non-Pueblo tribe of the southwestern United States. It would be interesting to know whether it is found among the more southerly Apache and Lipan bands.

There is some variation in the sex differentiation of weaving. Zuñi and Navaho women weave; men also occasionally.²⁶ Among Hopi and Pima men are weavers, and by implication this is true at Santa Clara.²⁷ Either men or women wove among the Maricopa.²⁸ It is the common assumption that all weaving was done by men at the Spanish advent and that the Navaho learned the art subsequently to the introduction of sheep.

Hopi, Navaho, and Pima spindles resemble the Zuñi in having disk whorls.²⁹ Pepper states that the older Navaho whorls are thicker and smaller than that illustrated, which seems to be four or five inches in diameter. The Pima also have a spindle in which a small cross-stick takes the place of the whorl. It has been assumed that pre-Conquest spindles lacked whorls, but this awaits further archeological data. I am not sure that Mrs. Stevenson's remarks mean that she actually saw Zuñi spindles without whorls.

Both Zuñi methods of spinning are found elsewhere. The

²³ Handbook of American Indians, (Bull. 30, B. A. E., 1, 1907, 154, 348).

²⁴ C. Lumholtz, *Decorative Art of the Huichol Indians*, (Mem. Amer. Mus. N. H., 3, 1904, 284). Weaving of some sort is credited to the Seri by W. J. McGee, *The Seri Indians*, (17th Ann. Rept., B. A. E., part 1, 1898, 230).

²⁵ Espejo stated that they obtained cotton mantles by trade (Bandelier, 176).

²⁶ Matthews, 385, G. H. Pepper, *The Making of a Navajo Blanket* (Everybody's Magazine, vi, 1902, 35); R. W. Shufeldt: *The Navajo Belt Weaver* (Proc. U. S. National Mus., 14, 1891, 393.)

²⁷ Curtis, XII, 24, 220; Lewton, 5. Hough, 82, notes a Navaho woman weaver resident among the Hopi. Russell, 148, 150, cites Bartlett (1854), 149. Robbins, Harrington, and Freire-Marreco, 103. "At Santa Clara the last man who wove large ceremonial blankets of cotton died less than thirty years ago."

²⁸ Hrdlička, 361.

²⁹ Matthews, 376, Pepper, 38. Russell, 148.

Navaho rest the spindle on the ground, sometimes letting it rest against the leg as well: the Hopi roll in on the thigh.³⁰ The Pima use an unusual method, supporting the lower end between the big toe and the next, where it sometimes rests in a cup.³¹ This recalls the pre-Columbian method in Mexico. The yarn is rolled in balls by the Pima, Hopi and Navaho.³²

The construction of Hopi and Navaho looms is identical with that of the Zuñi.³³ These have the same method of suspension between ceiling (or beam) and pegs (stones, or log) below. They have the same tension bar and the device for regulating it, the loops coupling it to the loom bar, loom strings attached by a binding cord, and additional edge warps. An unusual Navaho arrangement was necessitated by a low ceiling. The loom is the same but the warp is doubled back over an upright frame instead of being fastened to the ceiling.³⁴ These looms are vertical, but those of the Pima, Papago, and Opata are horizontally placed. They consist simply of two pairs of stakes which hold the loom bars apart. This loom with the warp directly on the loom bars is essentially the arrangement for Zuñi belt weaving, although it is not tubular weaving.^{34a}

The Navaho, like the Zuñi, use a warping frame, but the side bars are rough poles. According to Matthews, the warps are wound continuously over the end bars, but cross at their mid-points.³⁵ This may be the Zuñi custom also. It is quite convenient for separating the sheds when attaching the healds, but after the warp is taken off the end bars, it comes to the same thing as the Zuñi method. The loom string is three ply and twined through the warps.

In the Navaho method described by Pepper the loom strings

³⁰ Matthews, Pl. xxxiv; Goddard, 205; Pepper, 38; Franciscan Fathers, 227. Pepper, 38.

³¹ Emory and Bartlett, cited by Russell, 148.

³² Russell, 148. Matthews, Pl. xxxiv.

³³ Hough, 85; Curtis, II, ill., 84; James, figs. 244, 245. Matthews, Pl. xxxviii, fig. 42; Goddard ill., 203-206; Franciscan Fathers, 221, 235.

³⁴ James, fig. 130.

^{34a} Russell, 149-151; Curtis, II, 111; Bandelier, 242.

³⁵ Matthews, 378; Pepper, 38, ill., 39; Matthews, 379; Franciscan Fathers, 235

are first bound directly to the end bars and the warp passed through these strings.³⁶ This obviates substituting loom bars for these end bars, but seems rather difficult to manage.

The Pima, and presumably the Papago, warp the yarn directly on the loom bars tied to the stakes.³⁷

Navaho bobbins are twigs "wound like a kite string," that is, much in the Zuñi manner, or balls of weft are used. The Pima bobbins are wound exactly like those of the Zuñi.³⁸

The Navaho, like the Zuñi, never pick in the full width of the warps at one time (except for narrow belts). It is certainly possible to insert the weft for the full width where the design sheds are formed by healds. Perhaps the habit of picking in small sections of warp at a time is carried over to dress fabric weaving from blanket weaving, where the designs commonly cover only a narrow area. Then too it seems difficult to throw the bobbin for the full width of the loom without some mechanical device. The Navaho also form the sheds with the weaving sword and use a fork to push down the picks.³⁹

Additional edge warps appear in Hopi and Navaho looms, fastened directly to the loom bars. Matthews noted that when the Navaho used a two strand edge warp, these were twisted each time the weft passed around them.⁴⁰ This may also be the Zuñi usage, although the strands do not have to be twisted.

Hopi and Navaho reverse the loom after weaving a small portion of cloth, and the latter at least fill in the last picks in the Zuñi manner.⁴¹ Sometimes the Navaho weave a little at the top of the loom and do not reverse it. Matthews describes weaving from bottom to top without reversing the loom as the exceptional Navaho practise, the desire being "to have both ends uniform even if the figure be a little faulty in the center." But I note that most of the published illustrations (blankets, for the most part) do not show a finished section at the top of the loom.

³⁶ Loc. cit., 39.

³⁷ Russell, 151.

³⁸ Pepper, 40; Matthews, 378. Russell, 151.

³⁹ Matthews, 380, 381; Franciscan Fathers, 241.

⁴⁰ Curtis, XII, ill., 84. Matthews, 381.

⁴¹ James, figs. 244, 245; Matthews, 381.

The Navaho use the same method of doubling the fell on itself in order to lower the unpicked warp as do the Zuñi, according to Matthews. Pepper, however, describes a method whereby the lower loom bar is removed, the fell rolled up, and the loom bar sewed to the upper part of the fell by a cord passing through the loom cord which is still attached to the bar.⁴²

Hopi and Pima use a stretcher to maintain a uniform width. That of the Pima is similar to the second Zuñi type described.⁴³

Hopi, Navaho, and Pima weave with two healds, i.e., one free and one fastened to the warps. The Hopi and Navaho also use four rods like the Zuñi, which in the Navaho case at least is specified as giving a diamond pattern.⁴⁴ Matthews' fig. 47 shows an arrangement of the warps on the healds identical with that for the Zuñi diamond pattern. His warp no. 1 corresponds to my no. 4. It should be noted that his fig. 48 does not show the pattern produced on the face of the cloth by this heald arrangement but that on the reverse side.⁴⁵ My Zuñi pattern differs (Fig. 3) only in that the third and second healds are raised immediately above the center of the diamond.

In producing designs on blankets the Navaho sometimes tie cords around appropriate groups of warps and sketch the designs in the sand.⁴⁶ Both these practices may occur at Zuñi.

Two-faced blankets, thought to be a recent Navaho innovation by Matthews, were not noted at Zuñi.⁴⁷

Weaving of belts is found among Zuñi, Hopi, Cochiti,⁴⁸ Navaho,⁴⁹ Pima, Maricopa, and Huichol.⁵⁰ Navaho and probably

⁴² Matthews, 380; also Franciscan Fathers, 238; Pepper, 41. The last method seems impossible, for the loom cord would be part of the completed fell.

⁴³ Curtis, XII, 84; Russell, 151.

⁴⁴ Curtis, XII, 84; Goddard, 203, 206; Russell, 151. For illustrations see Goddard, 201; Pepper, 36.

⁴⁵ Incidentally the bottom of the cloth in his fig. 48 is at the left hand of the picture

⁴⁶ Pepper, 40; Matthews, 385. The latter practice is denied by the Franciscan Fathers, 250.

⁴⁷ W. Matthews, A Two-Faced Navaho Blanket, (*Amer. Anthropol.*, n. s., 2, 1900, 638-642; Franciscan Fathers, 244.)

⁴⁸ Bandelier in Matthews, 391.

⁴⁹ Matthews, 389-391; rare according to Shufeldt, 391.

⁵⁰ Russell, 152. Hrdlička, 361. Lumholtz, 284.

Hopi make these by tubular weaving: at Cochiti broad belts are made in this fashion, the narrower ribbons being woven on belt looms, according to Bandelier

The Navaho prepare the warp on four stakes, according to Matthews, not directly on the loom as the Zuñi do. This has the advantage of dividing the sheds at the same time. However, Stephens noted warping directly on the loom bars. In this case the bars were held in place by stakes, not by a frame. A stick about which each warp is looped takes the place of the three sticks and the bowed sticks of the Zuñi (Fig. 4, c and d). The unfilled warp is cut to form fringes also.⁵¹

The belt loom is used by the Hopi (notwithstanding my Hopi informant), Cochiti, and Huichol, but not by the Navaho.⁵² The Hopi hold this between girdle and feet; the Huichol fasten one end to a post.

The reed is used by the Hopi, but evidently not by the Huichol.⁵³ Mason figures a Hopi reed in which the cross-rods are of various lengths to mark the warp for the design.⁵⁴ The Huichol sword looks like a "bowie-knife or short-sword," presumably similar to the Zuñi affair.⁵⁵

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⁵¹ Matthews, 389-390; A. M. Stephens in James, 132.

⁵² Hough, 86; Lumholtz, 284.

⁵³ Cf. Lumholtz, fig. 367.

⁵⁴ Loc. cit., Pl. 7, fig. 5.

⁵⁵ Lumholtz, 285. Other data on Hopi weaving are given by Walter Hough: *The Hopi Indian Collection in the United States National Museum* (Proceedings, United States National Museum, 54, 1918).

BOOK REVIEWS

METHODS AND PRINCIPLES

The Children of the Sun; a Study in the Early History of Civilization.

W. J. PERRY. New York: Dutton, 1923. xv, 551 pp., 16 maps. \$8.00.

Mr. Perry, who is reader in comparative religion in the University of Manchester, is a representative of the historical school founded by Professor Elliot Smith and the late Dr. Rivers; and his book presents the tenets of that school with greater clearness than could reasonably be expected of the briefer expositions preceding his present one. Under the caption of "the archaic civilization" he describes a complex embracing, among other features, irrigation, pottery, metallurgy, the sun-cult, mother-right, exogamy, the dual organization. The combination existed in Egypt at the beginning of the Sixth Dynasty and began to be diffused over the region stretching from Sumer through India, Indonesia, and Polynesia to Central America and the Eastern United States, the impulse firing the voyagers being the quest of pearls and other precious materials that were supposed to preserve life (p. 459 f.). In Egypt alone there was progressive cultural evolution, everywhere else the process of degeneration set in, in varying degree (p. 472). The extent to which the author is willing to carry this conception is illustrated by his contention that probably it will be found that, prior to the coming of this civilization, the native peoples were devoid of any magical or religious practices or ideas (p. 480).

The Australians, for instance, are said to have derived most of their culture, including totemism and magic from the "archaic civilization" that sprang into being on the banks of the Nile (pp. 346, 397).

Although Mr. Perry has read widely and adopts a uniformly courteous tone, I have rarely encountered a more parochially dogmatic work. My objection is not so much to the views advanced (not that I share them) but to the perverse refusal to give reasons against positions held on definite grounds. For example, scholars who decline to accept the historical value of oral tradition are waved aside without any attempt to examine the grounds of their skepticism (p. 128); the origin of exogamy is sought in a deliberately executed political scheme as though that type of theory had never been criti-

cised (pp. 368 sq.); and as though Boas, Swanton, Father Schmidt and others had never written on the subject, the uniform priority of maternal over paternal descent is alleged (pp. 240 sq.). Unfamiliarity with the progress of anthropological thought is likewise exhibited in the references to Professor Ellsworth Huntington's theories (p. 408), which are not more palatable to most of us than to Mr. Perry. To this should be added a persistent reliance on catchwords which in some cases are so vague as to lose all significance. For example, the term "dual organization" as here used is not restricted to a moiety system but extended to dualism of every form, economic, political, mythological (p. 282). I am by no means convinced that every moiety system in the world can be traced to a single origin, and where the notion of twin heroes is brought under the same category and reduced to the same historical source as matrimonial group dualism I must confess that the argument transcends my understanding. Mr. Perry seems greatly excited over the fact that certain peoples divide into two sides when playing games and that the division is by the pre-existing moieties (p. 326). But the very nature of certain games implies a contest between two opposing sides; and when the playing is by groups, nothing seems more natural than to divide along lines already familiar to the players. Regarding the alleged historical unity of the dual grouping in Mr. Perry's sense, I should like to provide him with a concrete example of the quite independent development of such an alignment in recent times. When visited by Prince Maximilian of Wied-Neuwied, the Crow had seven military societies embracing the male population, but within forty or fifty years the number was reduced virtually to two, the Foxes and the Lumpwoods, which organizations then represented a perfect example of two rival and in a sense antagonistic groups. My reading suggests that a similar development through reduction has repeatedly occurred.

Mr. Perry's protest notwithstanding (p. 476), I also believe that his use of such a term as "pottery" exemplifies the catchword mania when applied indiscriminately to prove diffusion. Egyptian wheel-made pottery is *not* equivalent to the hand-made pottery of America or Oceania. I cannot conceive wheel-using male potters disseminating "pottery" by teaching *women* to mould or coil clay by hand.

Readers of this Journal will be particularly interested in the author's discussion of New World problems. As a matter of fact, it bristles with inadequacies and even positive misstatements of fact. South America is virtually ignored, as though the culture of the West-

ern Hemisphere could be adequately discussed without that continent, and the Aztec are described as a pastoral people (p. 234). It does not occur to Mr. Perry that before assuming an alien origin for Central American civilization it would be desirable to consider the possibility of its derivation from the ruder aboriginal cultures which are disdainfully neglected throughout under the not wholly appropriate name of "food-gatherers." I cheerfully admit that the author impartially ignores facts favorable and unfavorable to his hypotheses. For example, he emphatically denies that the Pawnee have the dual organization, though its recurrence would yield an additional example for the spread of that feature (pp. 315, 321); yet matrilineal non-exogamous moieties associated with winter and summer, respectively, are noted by Murie as a most significant element of Pawnee society (Anthropological Papers, American Museum of Natural History, xi, p. 642). This error may seem a mere peccadillo in a work of such dimensions, but it is symptomatic of the entire treatment of American data. Mr. Perry does not know how to appraise the evidence available because the prerequisite saturation with ethnographic information is wanting. The extremely meagre information on the Eastern Siouans is weighted as heavily as that based on the ample Omaha records, and we are told that the Sioux in their ancestral home had absolute monarchs (p. 194). The Saponi are said to believe in a creator, but the Omaha "have no idea whatever of creation, nor have their cognates the Osage, Ponco (*sic*) and others" (p. 212). Sir J. G. Frazer's misinformation on the change of descent among now patrilineal tribes is dished up once more (p. 252), though the simple process of examining the kinship terminologies of some of the peoples cited would show how deep-rooted paternal descent is among them. To add but one illustration, the Navaho are alleged to be "derived from the same source as the Pueblo peoples" (p. 267).

It is, however, more profitable to discuss another matter, on which Mr. Perry can cite at least the partial support of respectable Americanist authority. He treats all the North American cultures as derivative from those of Central America:

The culture history of North America was that of steady degeneration in the material arts and crafts (p. 36).

Because maize cultivation can with reasonable certainty be traced to Central America, the author holds that *all* culture must have come in a more or less steady stream from the same source (e.g., p. 193).

I cannot too emphatically express my dissent from this proposition, which substitutes a naïvely *simpliste* view for the demonstrable facts of culture history. The fact that maize spread from Central America implies nothing whatsoever as to the origin of other cultural elements, each of which must be examined for itself. When a higher and a simpler culture come into contact, the borrowing is not altogether in one direction: the American Indians borrowed iron tools, horses, fire-making apparatus from the Caucasian invaders, but the latter borrowed maize, the potato, and tobacco. Thanks to Dr. Laufer, we know that the Chinese, their general superiority notwithstanding, borrowed feature upon feature from ruder peoples. To return to the New World, we find everywhere—*pace* Mr. Perry—an adaptation to local conditions impossible without some degree of that inventiveness which he implicitly denies. Sometimes, as in the case of Californian basketry, we can find an unusual technological development that cannot be derived from without because it exists nowhere else. How *could* techniques of hunting and fishing or food-preparation that are locally rooted (say, the South American manioc or the Californian acorn complex) be borrowed from other areas? Assuredly, a higher culture is likely to borrow to a lesser extent than the ruder culture with which it comes into contact. Yet even in material things we have seen that this does not exclude diffusion in the reverse direction, while custom and belief are less likely to be affected for the obvious reason that superiority in these phases of social life is not nearly so obvious. It is indeed contended that the splendor of a superior technological civilization will automatically inspire the simple peoples with an admiration for all the associated features, but the American testimony is clearly contradictory to this thesis. In short, wherever we examine the actual history of an area in detail, we discover complexities little dreamed of by those who arrogate to themselves the title of “historical” anthropologists. The Sun Dance or the system of military societies in the Plains is not primarily a fixed combination of elements disseminated from a single center, but an accretion of traits originating in diverse tribes, some of them of relatively simpler status. A study of Crow art suggests that its beadwork has been strongly influenced by Dakota patterns, while its rawhide decoration bears the stamp of Shoshoni contact; the Crow, in other words, have borrowed from both a somewhat more complex and a somewhat ruder people. There is no royal road to culture-history.

Reverting to Mr. Perry, I must regretfully register the verdict that his work, revealing as it does unfamiliarity with both ethnological theory and ethnographic fact, represents nothing more than the well-meant but futile efforts of the proverbial iconoclast.

ROBERT H. LOWIE

EUROPEAN PREHISTORY

Ancient Man in Britain. DONALD A. MACKENZIE, with Foreword by G. ELLIOT SMITH. New York: Frederick A. Stokes Co., 1923. Pp. XII 257, XVII pls.

Ancient man is a subject that has many approaches; it is a vortex towards which are carried able men in many related fields, and each leaves his contribution often very helpful, especially to students in the field from which the author himself momentarily emerged. Geologists, paleontologists, zoologists, surgeons, classicists, and folklorists have all tried their hand with varying degrees of success and all have had a following; so that interest in the antiquity of man is greater at present than it ever was before.

As author of *Egyptian Myth and Legend*, *Myths of Crete and Pre-Hellenic Europe*, and *Color Symbolism*, Mr. Mackenzie approaches the subject of ancient man from the side of mythology and folklore. The prehistoric archeologists who wish to know more about these two subjects would do well to read Mackenzie's *Ancient Man in Britain*; on the other hand, to those who want to know more about man's organic and cultural evolution, the work may prove to be disappointing. The first chapter, "Britons of the Stone Age," seems to ignore everything earlier than the Neolithic. The Paleolithic does appear, however, in the second chapter, "Earliest Traces of Modern Man." The Piltdown discoveries are dismissed with about three lines; two of these occur in the third chapter which is devoted largely to Aurignacian man, especially the skeleton found at Paviland (Wales). The author classes Mousterian as Lower Paleolithic and is inclined to believe that the horse was domesticated in Paleolithic times, a view not supported by the evidence.

A good deal of space is rightly devoted to Britain's trade connections with the continents of Europe and Africa, which are discussed under such chapter headings as "Shell Deities and Early Trade," "Ancient Mariners Reach Britain," "Neolithic Trade and Industries," "Metal Workers and Megalithic Monuments," and "Celts and Iber-

ians as Intruders and Traders." In this connection the author believes that the canoe found embedded in silt of the river Clyde twenty-five feet above the present sea-level, may have been left there by Azilian traders; it had a plug of cork which could have come only from Italy, southern France, or Spain.

The author does not care for the system of prehistoric classification now in general use; he would scrap such terms as "Paleolithic," "Neolithic," and "Bronze" and "Iron Ages." For the first he would substitute "Pre-Agricultural Age" with two sub-divisions: (a) Reindeer Age with Aurignacian, Solutrean, and Magdalenian industries; (b) Early Red Deer Age with Azilian, Tardenoisian, and Maglemosian industries. His "Early Agricultural Age" would include: (a) Pre-Celtic Age with Neolithic, copper, and bronze industries; (b) Celtic Age with bronze, iron, and enamel industries. Finally his "Romano-British Age" would link the prehistoric with the historic. The author does not seem to be aware of the fact that representations of the red deer have been found in more paleolithic stations than have those of the reindeer; and representations of the horse occur in more stations than do those of the red deer. Why not the "Equidian Age, then, instead of the "Reindeer Age"? This new system apparently leaves entirely out of account the ages which preceded the Upper Paleolithic: Eolithic, Pre-Chellean, Chellean, Acheulian, and Mousterian—unless perchance the author intends to retain these despite the fact of their being based on lithic industry.

GEORGE GRANT MACCURDY

La Tène, Monographie de la station publiée au nom de la commission des fouilles de La Tène. PAUL VOUGA. 4to., 169 pp., 50 pls., and 2 plans. Leipzig; Karl W. Hiersemann, 1923.

La Tène was an important stronghold during the second Epoch of the Iron Age and has given its name to that Epoch. The station, discovered in 1858, is situated on the river Thielle at the point where it flows out of Lake Neuchâtel. Explorations, systematic and otherwise, were carried on at various times; the last, covering the period from 1907 to 1918, was begun under the supervision of W. Wavre and completed by the present author. Among previous explorers there should be mentioned F. Schwab, E. Desor, V. Gross, F. Borel, and Émile Vouga. The rich and characteristic finds made by Schwab and Desor led Hildebrand in 1874 to choose La Tène as the type

station for his second Epoch of the Iron Age. These two early explorers had to fish for what they recovered. The correction of the waters of the Jura, carried on from 1868 to 1881, resulted in the lowering of the water level in the lake by 2 m. (6.56 ft.); this brought the site above water level and facilitated the excavations undertaken by Émile Vouga, who found the piles of two bridges across the river Thielle and the piles of many buildings.

La Tène has been the subject of many memoirs and shorter papers. The present author has set himself the task of completing in the light of the recent excavations the work so well begun by Schwab, Desor, and his own father, Émile Vouga, to whom the volume is dedicated. An idea of its importance may be gathered from the author's estimate that some 2,600 objects from La Tène have found their way into various museums; the principal collections are at Neuchâtel, Bienne, Berne, Geneva, and Zürich. They consist, for the most part, of weapons both offensive and defensive. Of swords alone Vouga can account for 166, a figure which does not include those sold by dealers to private individuals; this number becomes all the more impressive when one recalls that for the whole of France Déchelette was able to list only 410 swords and daggers belonging to the same period.

The presence of arms of all sorts, the strategic position of the place, the absence of evidence suggesting a place of manufacture, as well as the absence of feminine apparel and of objects pertaining to family life, have led Vouga to the conclusion that La Tène was a fortified emporium (*entrepôt*) occupied by the military.

The fifty photogravure plates display a series of objects so carefully selected and artistically arranged as to form an ideal substitute for a collection of originals.

GEORGE GRANT MAC CURDY

La Touraine Préhistorique. LOUIS DUBREUIL-CHAMBARDEL (preface by CAMILLE JULLIAN, membre de l'Institut). 4to., 143 pp. 63 ills., 2 maps. Paris; Librairie Champion, 1923.

The author has made a laudable effort to give one an idea of the whole of prehistory as revealed by finds in the Touraine. The region in question is best known through the famous Neolithic flint quarries and workshops of Grand-Pressigny (Indre-et-Loire), known since 1863. On account of its quality and attractive color, Pressigny flint became an important article of Neolithic commerce. Thanks to its

exceptional color (beeswax), the extent of the trade in Pressigny flint can easily be traced geographically. Examples have been found in 443 communes of France; they have also been reported from Belgium, Switzerland, and Italy. Traffic in this flint does not seem to have existed prior to the Neolithic Period, for it has never been found in Paleolithic stations, even those near by such as the Mousterian cave of La Roche-Cotard near Langeais and the caves of the Layon valley in Anjou. If the Paleolithic population made use of this flint, and there are surface indications that they did, it was for local consumption only. The author quotes Saint-Venant as authority for the statement that commerce in Pressigny flint persisted into the Bronze Age, at least through the first part of it; evidence for this is afforded by the dolmens in Brittany and the Cévennes, also in a number of lake villages of Switzerland including Fenil and Sutz in Bienne and Saint-Blaise (Neuchâtel).

As far as the Paleolithic Period is concerned, the Touraine offers very little except surface finds and these lack the value attached to finds made *in situ*. The only Paleolithic deposit *in situ* thus far explored is that in the cave of La Roche-Cotard, which is obviously of Mousterian age.

The author's conclusion is that the Touraine was inhabited during all the great periods of prehistory: Paleolithic, Neolithic, Bronze, and Iron. He admits complete ignorance in regard to certain sections of the region in question and the lack of stratigraphic data, but believes that many of the gaps in our knowledge may yet be filled by sustained systematic effort.

GEORGE GRANT MACCURDY

NORTH AMERICA

Observations on the Ethnology of the Sauk Indians. ALANSON SKINNER. (Bulletin of the Public Museum of the City of Milwaukee, vol. 5, pp. 1—57, 1923).

It should be noted in the beginning that this paper makes no claim to being a monograph, but is merely a series of observations. However, any information on the Sauk Indians, whose ethnology is so little known, is extremely welcome. First we have a brief introduction, then a sketch of the former history of the Sauks, and finally outlines of Sauk ethnology. Much of the information given is both novel and important (especially the lists of gens names and the notes

on the Medicine Dance); and it is presented in a very attractive way. On the other hand the pamphlet undoubtedly suffers from defects, some of which the reviewer (who has been among the Sauk three different times) will point out.

No bibliography is given, presumably because we are told (p. 6) that there is a good bibliography of the Sauk under the article "Sauk," *Handbook of American Indians*, (Bulletin 30, Bur. Amer. Ethnology). It is sad for the reviewer, a member of the Bureau, to be obliged to say that the bibliography given is good for history (though even here one or two references are lacking, e.g., H. W. Beckwith, *The Illinois and Indiana Indians*, 1884), but weak for ethnology.

I do not wish to open anew in detail the old controversy as to who the Mascoutens (p. 7) were; but I should like to point out something that has been absolutely ignored by historians up to date, namely, the Fox word Mäskötäw^a (in Jones's transcription; there are slight variants) means "Peoria": see Jones, *Fox Texts*, passim; and note Forsyth (in 1827), *apud* Blair, *Indian Tribes of the Upper Mississippi and the Great Lakes Region*, vol. II, pp. 200, 201 (see also p. 202):

Mascotins . . . All those different bands of the Ninneway Nation spoke the language of the present Miamies, and the whole considered themselves as one and the same people, yet from the local situation of the different bands and having no standard to go by, their language assumed different dialects, as at present exists among the different bands of the Sioux and Chipeway Indians.

I may add that a Fox woman, Mrs. Joseph Tesson (now about 80 years old) years ago told me that the friends of the Mäskötäw^a were the Miamies, and that they spoke practically the same language. So I think we must admit that there were two sets of the Mascoutens.

As to the statement (p. 8) "the Muskwaki of Tama, Iowa, are said to preserve traditions of their friendship to the Iroquois," the truth of the matter is that the whole thing was told them by Steward, the author of *Lost Maramech and Earliest Chicago* (1903); so I have been informed by them.

The meaning of the native name for the Sauk has long been under dispute (p. 10). The meaning "Yellow Earth" goes back further than 1885; it certainly is the meaning assigned by Forsyth (1827). Nevertheless I do not think this interpretation can be sustained by a philological investigation. I have briefly given my reasons in *Current Anthropological Literature*, II, p. 234 (which Skinner ignores). But in view of the interest in the matter I may be permitted to recapitu-

late my arguments in a more extended form. The idea that the word means "something sprouting up" is not a very modern "folk explanation" as Skinner implies: see Morgan, *System of Consanguinity*, 1871, p. 288: "Saw-kee, 'Sprouting Up,' the name by which the Sauk call themselves." Note too, Jones's *Fox Texts*, p. 34, footnote 2: asāgīwagī "they that came forth, or out into the open;" the reference is to their origin when they came from under the water. On this point see the traditional origin of the Sauk (Fox version) given by Jones, JAF., 1911, pp. 211, 212. So that this particular meaning is not a modern innovation. Turning now to the philological point: if Sauk meant "Yellow Earth" the native word would be *A'sāwa'kī'A' (plural A'sāwa'kīA'gkī') whereas it is not this but A'sāgī^{WA}' (cf. the plural form given by Jones, *Fox Texts*, passim, Asāgīwagī; a variant with initial ō also occurs). The medial ā, not āwa, and the medial g, not 'k, show at once the translation "Yellow Earth" is but a "folk explanation" undoubtedly under the influence of Me'ckwa'kī'A' (plural Me'ckwa'kī'Agkī') "Red Earth" or rather "Red Earth people," a rendition which is etymologically justified. On the other hand A'sāgī^{WA}' presents a difficulty to etymological connection with sāgī- "come forth, etc." in having final ^{WA}; not ^A; but it is not insuperable. The initial A is no bar; compare Anenōtā^{WA}' "Indian," besides the more common nenōtā^A'. The doublet with initial ō is probably to be explained as being of the same nature as a few other doublets of this sort. But this is not entirely convincing. Summing up, we may say that the translation "Yellow Earths" is certainly unjustified by a philological analysis, and that the translation "They who came forth" at the most is only plausible, not definitely proved. [The rendition, "People of the Outlet" is based on the same etymological considerations as "They who came forth."]

The section on Social and Political Organization is, it must be confessed, decidedly weak. The plea is made (p. 11) that as the earlier writers and most of modern times have failed to realize the Sauk and Fox were totally distinct people, it is impossible to utilize much of the information they give because of the confusion of data. It is true that most of the earlier writers do confuse the two; nevertheless at times they distinguish them; and I can not find such data utilized to any extent though Jones, Owen, Busby, Re(o)buck, and Steward give specific Fox information; while Armstrong supposedly gives Sauk information that in point of fact frequently is misinformation. A little care would show Skinner that Morgan in his *Systems of*

Consanguinity really presents Sauk and not Fox data (see p. 288; some schedules are faulty). A little ingenuity shows also that Morgan is presenting Sauk and not Fox data in his *Ancient Society*. Observe he says (p. 170) that the Sauk and Fox number but seven hundred in 1869. By consulting the Report of the Commissioner of Indian Affairs for that year (see pp. 32, 362, 461) and knowing the political situation, it is impossible to avoid the conclusion that Morgan really referred to Sauk, for the main body of Fox had left Kansas for Iowa long before this time. By comparing the lists of Sauk gentes given by M. R. Harrington (*Sacred Bundles of the Sac and Fox Indians*, pp. 131, 160, 163; Skinner has not discussed this at all), it is highly probable that the list given by Galland (for example, in *Annals of Iowa*, 1869, p. 350) is Sauk, not Fox; this belief is confirmed by comparing the list given by Forsyth, not Marston as Skinner states, as well as an unpublished Sauk list of my own. I add that Skinner could have performed no better service than to have sorted out all the Sauk material from the so-called Sauk and Fox in the scattered ethnological writings wherever practical. His own field work among the Sauk would have forearmed him for the tedious task. As to Skinner's suspicion that Jones's Sauk data may be colored by Fox data, as Jones was a Fox by descent, I do not think this can be maintained: Jones was brought up among the Sauk and his list of Fox gentes contains one at least (Sea) that is almost certainly Sauk and not Fox, and in his grammatical sketch of Fox there are some statements that are certainly false as applied to Fox; it is more likely that Jones's Fox data were colored by Sauk data than the reverse.

The Perch (Ringed Perch) gens given by Forsyth (not Marston) is not probably a personal name (Skinner, l.c., p. 11, 12). Correspondents to this occur in the lists of Galland and Harrington as well as an unpublished Sauk list of my own; and it is the same as no. 5 of Skinner's own list; the varying termination is simply a different way of expressing the idea that certain people belong to such and such a gens; compare Forsyth's Way-me-co-uck [in the Fox dialect Wämigō'agki'] with Skinner's Wämegoiwisujik, or the former's no. 6 with the latter's 10. And an exact equivalent occurs in Fox text written for me by a person of Sauk descent. This point is referred to by me in the *40th Annual Report of the Bureau of American Ethnology* (now in press). [The word is not translated in the lists of Galland and Harrington; nor have I been able to get a translation of it.] Neither is Bass probably a personal name (Skinner, *ibidem*): an equivalent is found

in the Sauk lists of Jones and Michelson. I think Morgan's alleged "Bone" gens is not a gens at all, but a band (cf. Skinner's no. 4 in his list of bands, and Jones, *Fox Texts*, p. 34). From the fact that the Morgan's "Big Tree" gens occurs in no other Sauk list of gentes, I have a suspicion that in some way the name of a Kickapoo gens has slipped into his list; at any rate a Tree gens exists among the Kickapoo: see the article Kickapoo, *Bull. 30, B. A. E.*, and Jones, *Amer. Anthropol.*, N. S., 15, p. 355. For a similar reason Galland's Water (not Great Water) is under a similar suspicion. Hall, quoted by Armstrong, *The Sauks and the Black Hawk War*, p. 14 (cf. Drake, *Life and Adventures of Black Hawk*, p. 30) though supposedly giving Sauk data, as a matter of fact so far as his statements can be controlled at all, refers to the Fox and not Sauk. As to Beltrami's statement that the Sauk were divided into four gentes, I presume there is some basis for it as years ago I was told by a Sauk informant that there were really only four important Sauk gentes; unfortunately the informant did not give their names. I do not think in a review I can be fairly expected to straighten out the gentile organization of the Sauk entirely, but I will point out a factor that must be reckoned with, namely, Does the child of a man of another tribe but married to a Sauk woman, belong to his gens or not? The Sauk have male descent; and if the first hypothesis is correct, an alien gens would be introduced with the birth of a male child leaving issue. In other words, under such conditions Sauk gentes would be "movable" and thus the discrepancies of the various writers might be accounted for.¹

The list of bands (p. 12) is novel and interesting. The list contained in the Sauk manuscripts of the late Dr. Gatschet has three of Skinner's seven, but a few others also. Incidentally I remark that no. 5 Tci'kwoskûk (Tcigu'ckAgkA' in my transcription) does not mean "Walks-on-the-bank's-edge" but "Sweeps-with-the-foot" and that he did not belong to the Deer gens but Fox gens: see also Jones, *Fox Texts*, pp. 34, 35. I add that William Jones and his father Henry Jones, both of the Eagle gens, belonged to this band, according to the Sauk manuscripts of Dr. Gatschet.

The rules governing membership in the tribal moieties are exactly the same as I have found to hold true for the Fox; but as far as the Sauk are concerned, the rules given are in direct contradiction

¹ In the proofs, I add that without denying the existence of a Buffalo Gens, Skinner's Nanososókwajik really means "those belonging to the Buffalo Society," and not "Those belonging to the Buffalo Gens."

with the rules given by Marston (*apud* Blair, l.c., pp. 156, 157) which agree with the rules given by M. R. Harrington, l.c., p. 131, and also with the rules furnished me years ago by U. S. Grant (deceased, of Fox descent, though he lived among the Sauk). The regulations given by Skinner also do not agree with the ones laid down by Forsyth (*apud* Blair, l.c., pp. 193, 194) which do not agree with those of Marston, etc. [Drake, l. c., pp. 31, 32 evidently has cribbed his information from Forsyth, as can be demonstrated in other passages too; so have McKenny and Hall, *History of the Indian Tribes*, etc. vol. I, p. 117; and so has A. R. Fulton, *Red Men of Iowa*, p. 135.] Armstrong, l.c., p. 16, does not state any definite rules as to which moiety the first child belongs to; neither does Hewitt (based on Jones) in the article "Sauk," *Bull. 30, B. A. E.* It is a thousand pities that Skinner did not work out the disturbing factors in the contradictory statements as far as he was able in the field; as it is, he does not even mention that there is published material on the Sauk moieties beyond his own. The Kickapoo and Potawatomi (Prairie Band) have similar moieties but the information I have received regarding the regulations on membership is not clear, and partly contradictory. But I feel that at some time an exhaustive study of the moieties of the Sauk, Fox, Kickapoo, and Potawatomi will have to be made before the obscurities will be cleared up. In the *40th Annual Report of the Bureau of American Ethnology* I have tried to show Siouan influence; as this matter is too complex to be treated briefly, I may say that Fox Tō'kân^{NA} is obviously a Siouan word, and that the emulative rivalry of the Fox dual division agrees partially with that of certain Siouan societies, and ask the reader to wait for the appearance of this long delayed Report for further details.

On p. 15 Skinner quotes his principal informant to the effect that the chieftainship of the Sauk formerly was hereditary in the Fish gens. This is confirmed by data furnished by Jones (*Bull. 30, B. A. E.*, article "Sauk"; Trout and Sturgeon gentes), and the information given me by the late U. S. Grant (see above): Ringed Perch [precise translation?] and Sturgeon, the former on the North side, the latter on the South side; definite localization of the various gentes in the village occurs according to the same authority; and in this we find additional reason for not holding all fish gentes to be really one; the possibility of a phratry must be reckoned with, such as occurs among the Ojibwa of Lac Court d'Oreilles: the various fish gentes can not intermarry but are quite distinct.

The information on adoption into another gens, and the adoption ceremony (p. 15) is well worth while. It goes without saying that we have a close counter part to the latter among the Fox; but I am not sure as to the former.

The description of the naming customs (p. 16) is scanty in comparison with the data furnished by M. R. Harrington, (l.c., p. 160 et sq.), whose work, by the way, Skinner consistently ignores.

Skinner has paid a good deal of attention to personal names (p. 18 et sq.), and both the specific information and the general line of reasoning deserve warm commendation. I have not checked up the lists of the names occurring in the various gentes systematically with names occurring in my unpublished list of names occurring in the corresponding Fox gentes, but I know some, at least, are the same. In one or two cases the rendition of the Sauk names is probably at fault, but only slightly so. By the way, if the brother of Wi'sa'kä'A' is a wolf among the Sauk (p. 24), it is news to me; his death at the hand of underworld panthers is also novel, if true. I wonder if Skinner has not unconsciously mixed up Menomini notions with Sauk ones?

On page 32 it should be noted that Skinner does not tell us whether by uncles and aunts, he means on both sides, on the paternal or maternal side. In the absence of such information we must understand on both sides, which is not ethnologically probable to judge from corresponding Fox practices, and it at least in part directly contradicts my own Sauk information. The general mourning customs of the Sauk correspond closely with the Fox ones. The custom of "Manabus's blanket" occurs also among the Fox, but it is (or rather was) used on certain special occasions only.

The section on Religion is good, and the notes on the Medicine Dance are particularly meritorious. By the way, there is documentary evidence (which is given in the *40th Annual Report of the Bureau of American Ethnology*) to support Jones regarding tree and scaffold burial among the Sauk. The story of the Thunderer captive has a Fox counterpart: see Jones, *Fox Texts*, p. 203; and in fact practically all the spirits, etc. mentioned have. A number of Fox informants state that there is a plurality of souls, which is opposed to the Sauk belief if we follow Skinner. The origin myth of the Medicine dance is practically the same as the two versions (one Fox; one Sauk and Fox, whatever that may mean) given previously by Jones. The word gäkinawatú'pijik (p. 51) which is left untranslated

in reality is *kä'kinawātapitcigki'* and means "those who sit and represent,"—a meaning most appropriate to the context.

It should be noted that the songs used during the moccasin game are not mostly obscene, as stated by Skinner (p. 57). There are plenty which are clean. Among the Fox there are some very indecent songs which sometimes are used during the moccasin game, but not many; nor have I heard them frequently, considering the numerous times I have witnessed the game. I may add that one of the most lascivious Fox songs used in this game, also to my own knowledge occurs among the Missouri Sauks, showing that obscene songs and "smutty" stories among American Indians are not the inventions of white ethnologists, as some have maintained.

There is a point which should be mentioned as bearing on all Sauk words and names cited in the paper: the phonetics are totally inadequate and perplexing beyond belief. Only my knowledge that the combinations -ng- -mp-, and initial sk- are foreign to the Sauk language has enabled me to identify some words, by assuming medial vowels (or an initial one in the case of sk-) have been omitted. Skinner's *x* is ' , and is used partly correctly, partly wrongly; at times it should be used when it is not indicated. I pass over other inaccuracies.

Summing up, we may say that we are very grateful to Skinner for much novel information on Sauk Indians; that the material for the most part is presented in an attractive way; that the paper is not intended as a monograph; nevertheless there is but too plain evidence of hasty composition with the result that documentary sources of information are practically passed over, and there is no serious discussion of the contradictory statements; but the valuable raw material remains.

TRUMAN MICHELSON.

SOUTH AMERICA

Los Principios de la Civilizacion en la Sierra Peruana. MAX UHLE. (Boletín de la Academia Nacional de Historia de Ecuador, vol. I, pp. (1-11,) (1920.)

Orígenes Centroamericanos. MAX UHLE. (*Ibid*, vol. IV, pp.) (1-6,) (1922.)

Influencias Mayas en el Alto Ecuador. MAX UHLE. (*Ibid*, vol. IV, pp. 205-241, 1922.)

Los Principios de las Antiguas Civilizaciones Peruanas. MAX UHLE. (*Ibid.*, vol. iv, pp. 1-11, 1920.)

Fundamentos Etnicos y Arqueología de Arica y Tacna. MAX UHLE. (*Ibid.*, pp. 1-99, 1922.)

Civilizaciones Mayoides de la Costa Pacífica de Sudamérica. MAX UHLE. (*Ibid.*, vol. vi, pp. 87-92, 1923.)

In the gradual disentangling during the past generation of the history of Andean civilization, the work of Max Uhle has been of prime importance. Until not so many years ago, Andean was Peruvian and Peruvian was Inca. What might have been pre-Inca was obscure, mysterious, Toltecan. Then the concept of something definitely pre-Inca emerged and attached itself to the ruins of Tiahuanaco. In the development of this idea, Uhle took a leading part. But when others stood still, he pushed on. He defined further regional types, traced their connections, set up a scheme of their sequences, once or twice was able to find substantiation in stratification, for the rest wove the connections ever closer. If as the years went by his scheme seemed to change somewhat, it was because it grew along with knowledge. Others have followed more or less hesitatingly, often not fully comprehending the scheme or the nature of the evidence from which it was derived. There seems not yet to have been an attempt to test and evaluate Uhle's findings as a whole, thoroughly and critically. But more and more of late is there apparent the influence of Uhle's thought and labors in the work of almost everyone concerned with Andean culture; and where somewhat different systems of interpretation have been put forth, the stimulus of Uhle is invariably traceable. The reason is that he was the first student, as regards the area, to combine a knowledge that was both broad and intensive with a clear realization of what the problems of culture history were and how they might be attacked.

It is therefore most gratifying that his work continues unflaggingly and with gradual extension of territory. Of most general interest is his latest chronology (*Princ. Antig. Civil. Peruanas*, p. 11), which detabulates thus:

150 B.C.-to 50 A.D., Ancon fishing culture; proto-Nazca structures of Chincha and Pisco.

50 A.D.-650, earlier and later proto-Nazca; 50-150, early structures of Pachacamac; 150-650, proto-Lima of Niveria; 150-300, early structures of Moche; Chavin de Huantar; Recuay pottery; 300-650, proto-Chimu; 350-500, monuments of Tiahuanaco; 500-650, style of Tiahuanaco in southern highland.

650-900 prevalence of Tiahuanaco style in S. highland, of Tiahuanaco and Epigonal on S. and C. coast, of early Chimu and Epigonal in N.

900-1100, stylistic decadence in S. highland; older black-white-red pottery in N. highland and C. coast; continuance of older Chimu; early Ica.

1100-1400, later black-white-red in N. highland and C. coast; later Chimu; later Ica style; 1100-1300, Chinchá influence to S., including formation of the Inca style at Cuzco and the Chinchá-Atacama style at Tiahuanaco, etc.; 1300 on, Inca influence in S., 1400 on in N.

The Arica-Tacna monograph describes and illustrates this sequence of local periods: primitive; Tiahuanaco and Epigonal (600-900); Atacama (900-1100); Chinchá-Atacama (1100-1350); Inca (1350-1530).

The papers on Ecuador and the Peruvian Sierra interpret the Marajo style of the mouth of the Amazon as derived from Colombia, with interesting resemblances from the Rio Napo; and the pillar and relief of Chavin de Huantar as directly due to Mayan influences, allied to proto-Nazca, and formative of the classic manner of Tiahuanaco.

The most recent paper, on Mayoid civilization in South America, perhaps goes farthest in stretching interpretation into speculation, but its striking chronological sketch map is interesting and suggestive.

The National Academy of History of Ecuador, in whose series these studies by Uhle appear beside papers by Jijón y Caamaño, Boman, and others, has published so vigorously and intelligently in the past few years that already it rivals any South American institution devoted to archaeology.

A. L. KROEBER.

AFRICA

Excavations at Kerma (Harvard African Studies, vols. v and vi)

GEORGE A. REISNER. Peabody Museum of Harvard University, Cambridge, Mass., 1923.

The results of the Joint Egyptian Expedition of Harvard University and the Boston Museum of Fine Arts at Kerma in the Dongola Province are embodied in two stately volumes. Through the excavations carried on from 1913 to 1915 it has come to light that Kerma represents the site of an old Egyptian colony called *Inbw-Amenemhet* (i.e., "the walls (or, fortifications) of Amenemhet") which had developed from an ancient trading-post of the sixth dynasty. At the time of the founding of the trading-post, probably under Pepy I,

the territory was populated by a race belonging to the North African group of peoples, of which the Libyans were apparently members. The Central African negroes had at that time not yet moved northward. The cultural state of the population around the Egyptian colony remained in a state similar to a late neolithic community.

As regards the colony itself, it seems to have received the height of development during the XII. dynasty. The Egyptian local governor and the various other officials sent to this lonely outpost brought with them their entire households, including craftsmen of every description. The latter, surrounded by new experiences in a foreign environment, and confronted with new materials, developed certain industries peculiar to the locality. Interesting and of some historical importance is the fact that Prince Hepzefi, a noble already known for some time from his tomb-inscription at Siut, having been sent to Inbw-Amenemhet by Sesostri I, had died at this place and was buried away from his own country. The Egyptian officials and colonists had fallen into the habit of acquiring and employing a considerable number of negro slaves, both male and female and took into their harems negresses and Nubian women. The mixing of Egyptians, Nubians and negroes in the colony had its marked effects in time, although during the XIIth dynasty the predominance of the Egyptian element was still maintained on account of the continued influx from Egypt, and even in the late Nubian period there remained individuals who retained Egyptian traits. The contacts of the three racial groups tended towards the enrichment of the Egyptian arts, such as were practiced in the colony, by the appearance of a certain number of new forms. Cultural changes took place—the most important of which affected the custom of burial, which, in the colony, differed in two points from the Egyptian practise of the same period: 1) the use of a bed for the chief body, and 2) the sacrifice of the wives (practises known in Egypt in the archaic period, and still known in Africa at the present time). From various indications, particularly the attitudes of the bodies in the grave and their positions, Reisner comes to the conclusion that the women and slaves did not die by the act of sacrificial executioners, but that they died voluntarily, by the compulsion of traditional duty, the death of suffocation by burial under the earth. The influence of one old negress from Central Africa, according to Reisner, in a harem might have started the so-called *sati*-burial custom in the colony of Inbw-Amenemhet, while the influence of a number of such negresses would have made it epidemic.

During the Hyksos invasion into Egypt it seems that the colony had received apparently the last small accession of newcomers from the north, but soon after the colony had become isolated and remained unsupported from the mother-country. The garrison at this time apparently was besieged, by some unknown enemy, the fort was taken, and the colonists and their households were put to the sword. With the successful attack of the place the occupation of Kash by the Egyptians in the Middle Kingdom had come to an end and the Egypto-Nubian culture, such as had flourished at Inbw-Amenemhet, practically died with the Egyptians who perished in the fort.

The creation of the remarkable Egyptian culture of *Inebu-Amenemhat* seems to have made no permanent impression on the culture of Ethiopia itself. Whatever traces remained were soon overlaid by the effects of the Egyptian occupation of the New Kingdom, and lost to sight. But in Egypt itself, there are traces of some influence exerted by the culture of Inebu-Amenemhat, visible even at this distance. Scattered through most of the cemeteries of the Middle Kingdom and the early New Kingdom, are isolated graves equipped with pottery which was evidently made at the southern colony, or in imitation of that pottery. In the tombs of Dynasty XVIII, there is the new and curious rite called *tekenuw*, which appears to relate to the *satt*-burial custom. But over and above this, the common pottery and the faïences of Egypt of the New Kingdom seem to be developments in form and technique, not identical copies, of the Egyptian pottery and faïences of Kerma.

The excavations at Kerma have borne a number of important results, and one would fain know more about the destinies of the ancient colony during the dark ages between the XIIth and the XVIIIth dynasties. Dr. Reisner, in his well-known thorough method, has dealt with his subject in an admirable way, laying under deep obligation all scholars interested in Africanistic studies.

H. F. LUTZ.

OCEANIA

Wrecked among Cannibals in the Fijis. A Narrative of Shipwreck and Adventure in the South Seas. WILLIAM ENDICOTT, Third Mate of the Ship *Glide*; with Notes by LAWRENCE WATERS JENKINS, Assistant-Director of the Peabody Museum of Salem. Publication no. 3 of the Marine Research Society, Salem, Massachusetts, 1923. 76 pp., 13 pls.

Mr. William Endicott's plainly-told, but fascinating account of the events which befell the crew of the ship *Glide* in Fiji more than ninety years ago is introduced by six pages of prefatory matter by Mr.

Jenkins. Copious footnotes by the same gentleman are scattered throughout the work, rendering exact data on points which the author of the journal was scarcely in position to obtain at the time the various events took place.

Apart from the general interest which attaches to Endicott's narrative, there is much of anthropological interest about it. He records phases of culture which it is impossible for the anthropologist to observe. His vivid account of a cannibal feast, which he went ashore purposely to witness, is his finest contribution to anthropological record.

To be sure, the anthropological reader yearns for details concerning numerous things which Endicott saw and dismisses with a word; for unlike William Mariner of Tongan fame, he neither possessed the time nor the interest to leave to posterity a similar account of the Fijians. Nevertheless, the reader cannot but feel grateful to him that he snatched as much time as he did from the arduous duties of securing cargoes of beche-le-mer. It is to be hoped that similar journals of the past century, still lying in manuscript, will ultimately be published.

E. W. GIFFORD.

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BRIEF COMMUNICATIONS

PERSONAL NAMES AMONG THE SARCEE INDIANS

By E. SAPIR

IN the summer of 1922 the writer studied the language of the Sarcee Indians, a small Athabaskan group now living on the Sarcee Reserve, near Calgary, Alberta. A set of personal names was secured in the course of the work from John Whitney, a half-breed, who was the source of the texts and grammatical material as well. As personal names reflect the culture of their bearers, it seems worth while to give these names and their literal translation. They will be listed under the current names of the Indians to whom they belong. Where an individual has or has had more than one name, they are grouped together under a single heading. In some cases an Indian possesses a nickname or two nicknames over and above one or more proper personal names; these too are listed. A few remarks on the nature of the Sarcee names follow the list.

PHONETIC KEY

The phonetic symbols used in this paper are as follows:

VOWELS: *a*, as in German *Mann*; *ɑ*, as in English *but*; *a*, like *a* but with distinct velar resonance marked in many cases by preceding *γ*-glide; *ɪ*, as in English *bit*; *u*, as in English *full*; *o* (variant of *u*), as in French *eau*; *ai*, *ai*, *au*, *ui*, diphthongs with half-long first vowels.

QUANTITY AND TONE: *a*· (and similarly for other vowels), denotes long vowel; *a*[·] (and similarly for other vowels), denotes long vowel on level tone with slight rearticulation (these vowels and those with inflected tones result from contraction of two vowels); *ɛ*, short vowel with high tone; *ɛ*, short vowel with low tone; *a*, short vowel with middle tone; *ɛ*·, long vowel with fully falling tone; *ɛ*·, long vowel with fully rising tone; *ɛ*·, long vowel with tone rising from middle position to high; *ɛ*·, long vowel with tone falling from middle to low; *ɛ*·, long vowel with tone falling from high to middle.¹ Note that many middle tones are secondarily dropped high tones or raised low tones.

¹ Owing to typographical difficulties I have not been able to use the proper symbols for rising tones and for half-falling tones. I have also had to put the acute and grave accents after, instead of over, the vowel in certain cases.

CONSONANTS:

Labial: *m*, nasal

Alveolar Stops: *d*, intermediate (i.e., gentle surd); *t'*, strongly aspirated surd; *t'*, glottalized (of "fortis" type); *n*, nasal

Guttural Stops (mid-palatal position): *g*, intermediate; *k'*, aspirated as above; *k'*, glottalized as above

Guttural and Palatal Spirants: *x*, voiceless velar (before *a*); *γ*, voiced velar (before *a*); *x*, voiceless guttural (mid-palatal position; before *a*, *a*); *γ*, corresponding voiced guttural (before *a*, *a*); *xw* and *γw* (also completely labialized to *w*), labialized forms of *x* and *γ*; *χ*, as in German *ich*; *y*, corresponding voiced spirant, approximately like English *y* of *yet* but more truly spirantal

Alveolar Sibilants: *s*, unvoiced, as in English *sit*; *z*, voiced; *dz*, *ts'*, *t's*, corresponding intermediate, aspirated, and glottalized affricatives

Palatal Sibilants: *c*, unvoiced, as in English *she*; *j*, voiced, as in French *jeu*; *dj*, *tc'*, *t'c*, corresponding intermediate, aspirated, and glottalized affricatives

Laterals: *l*, as in English; *l*, spirantal and unvoiced; *dl*, *tl*, *t'l*, corresponding intermediate, aspirated, and glottalized affricatives

Laryngeal: *'*, glottal stop; *h*, as in English; *'*, perceptible breathing after certain final vowels (here used only where of etymological significance)

Quantity: consonantal lengthening (e.g. -s'-) indicated only where it results from contraction of two consonants. Between vowels, particularly after short vowels, all consonants are more or less lengthened (e.g. *dud-* is to be read *dud'-*, *dit-d-*).

SARCEE NAMES

YOUNG-BULLHEAD:

1. *t'Ługð gútc'áwu* "prairie somewhere-big-the," i.e. Big-Prairie.

2. Nickname: *i'k'áyí nítc'ílí*, contracted from *i'k'áyí inítc'ílí* "(buffalo-)bull he-is-lame-the," i.e. Lame-Bull.

3. Nickname: *múts'í dít'k'a'l*, "his-head it-is-white," i.e. White-Headed.

THE-SARCEE:

4. *dudicá yì-t'LaL*, "antelope he-runs," i.e. Running-Antelope.

5. *gù 'át'lna'*, "with-them (indef.) he-does-so-diminutive," i.e. He-is-a-gambler ("to do with people" is Sarcee idiom for "to play with people, to gamble").

6. Nickname: *ts'ò-t'lnà*, "Sarcee" (*-t'lnà*, "such and such a tribe, people"; *ts'ò-* is no longer understood by the Sarcee).

CROW-COLLAR:

7. *t'sá's-l mizálá*, "crow his-neckwear-the," i.e. Crow-Collar.

8. *tc'á mì'íza*, "rain his-child," i.e. Thunder's-Child ("rain" has in Sarcee also the derived sense of "thunder").

9. *adjinà*, "something-he-sings-the," i.e. Singer.

TWO-YOUNG-MEN:

10. *ak'inà sgà^ak'a*, contracted from *ak'inà lsgà^ak'a*, "two-person youth-plural," i.e. Two-Youths.

11. *t'àsidá^a*, contracted from *-dá-l*, "on-top (of a horse)-he-sits-the," i.e. Rider.

12. *t'sik'uwa nihlána*, "women many-the," i.e. Many-Womaned.

RUNNING-IN-THE-MIDDLE:

13. *t'azik'a da-ni'ictc'ò*, contracted from *t'azik'a da-ni'ictc'ò*, "middle-on gun he-has-seized-it," i.e. Captured-a-gun-in-the-middle."

14. *mudzilyà ct'cilyit'ádzi*, contracted from *mudzilyà' àct'cilyit'ádzi*, "his-ears are-cut-apart-the," i.e. Split-Ears.

ONE-SPOTTED:

15. *tc'àcdi di'illci*, (sibilants of first word assimilated from *ts'àsdi*), "above he-is-spotted-the," i.e. Single-Spotted-Pinto.

16. *dá'nik'à nàzi'*, "gun-on he-stands," i.e. He-stands-on-a-Gun.

THE-OTTER:

17. *nàmlyi t'càdit'a'*, "otter wonderful-he-is-the," i.e. Sacred-Otter.

18. Nickname: *it'í k'át'lnà*, "wood male-he-is-the, wood-man," i.e. Carpenter.

FOX-TAIL:

19. *tc'ày:náyá tc'à*, (first word assimilated from *ts'ày:náyá*), "Kit-Fox-Tail."

20. *í'k'ayi yisk'a'*, "(buffalo-) bull rump-fat-the," i.e. Bull-Fat.

21. Nickname: *nik'wàl'ctyá*, "he-is-short-diminutive-the," i.e. Shorty.

TWO-GUNS:

22. *ak'iⁱ da'niⁱctc'ò*, contracted from *ak'iyi da'ni lctc'ò*, "two gun he-has-seized-it," i.e. Captured-Two-Guns.

23. *dzilaya k'ò*, "daylight-point-at (=heaven) fire," i.e. Heaven-Fire.

24. *it'sis 'ilà*, "one's-knee-joint fringing-the," i.e. (Buffalo's)-Fetlock.

TONY:

25. *moγwò*, "his-teeth," i.e. Toothed.

DOG:

26. *tlit'ca*, "dog-the," (relative form, cf. possessed form *-lit'cà*); also called *tlí*, "Dog" (absolute form) for short.

27. *gà^adjit'c ts'òt'inà*, "Blackfoot-real (=Blood) Sarcee," i.e. Blood-Sarcee.

YELLOW-LODGE:

28. *màya t'águsts'uwa*, "his-tent on-top-somewhere-it-has-been-painted-yellow-the," i.e. Having-a-Yellow-Painted-Tent.

29. *mìnist'iyǎ'gùnilinà*, contracted from *mìnist'iyǎ' ágùnilinà*, "his-protective-charm it-is-good-the," i.e. Having-a-Magnificent-Charm.

30. Nickname: *xànl*, "Cow" (originally "buffalo," but now "buffalo" is termed *xànit'c*, "cow-real, buffalo-real").

WOLF:

31. *mayazínà*, "Wolf" (possible etymological analysis: "his-fur-dark-the," but *-zin-* "black" is no longer freely used in Sarcee, though common elsewhere in Athabaskan, Ath. **-jén*).

32. *t'cá^ac'í tc'ák'a*, assimilated from *t'sá^as'í tc'ák'a*, "crow-ribs-the," i.e. Crow-Ribs.

33. *í'k'àyí mìnìsgáná*, contracted from *-gáni-í*, (buffalo-) bull his-shield-the," i.e. Bull-Shield.

BULL-COLLAR:

34. *í'k'àyí mizálá*, "(buffalo-) bull his-neckwear-the," i.e. Bull-Collar.

35. *tc'á t'ácdjidji*, (first word assimilated from *ts'á*), "stone it-is-painted-over-the," i.e. Painted-Stone.

36. *díⁱdáyá yíⁱl'LaL*, "(buffalo-) calf he-runs," i.e. Running-Calf.

CROW-CHILD (Cree Indian living on Sarcee reserve):

37. *t'sá^as'í mìⁱza*, "crow his-child," i.e. Crow-Child.

SARCEE-WOMAN (a man):

38. *gù' dísts'idl*, "them-with he-charged-the," i.e. He-who-charged-against (the Enemy).

39. *tc'i'z k'ús*, "Duck Neck."

40. *ts'ò't'ínà t'sík'à*, "Sarcee-Woman."

DICK STARLIGHT:

41. *íst'áni'ctc'ò'*, contracted from *íst'áni'ctc'ò'*, "it-has-been-feathered-the (= arrow) he-seized-it," i.e. Captured-an-Arrow. This name is generally pronounced with *-tc'à* instead of *-tc'ò'* in ordinary speech. Such an example indicates how little the etymology of even the most transparent name need be present in the mind of the Indian.

PAT GRASSHOPPER:

42. *mik'à dī'k'ázl*, "his-foot it-is-red-the," i.e. Red-Foot.

43. *más muk'à^at'ùni*, "knife it-is-broken-off-the," i.e. Broken-Knife.

44. Nickname: *dzuLà*, "rough-the," Roughy.

45. Nickname: *t'cújà*, "cylindrical-the," Longy.

TOM MANY-HORSES:

46. *ts'ò'st'Lá*, "Gopher" (literally, "he has run into a hole").

TOM HEAVEN-FIRE:

47. *ást's'à t'ànísda*, "first on-top-he-sat-down-the," i.e. First-to-Mount (his Horse).

48. *nídayá^a* "prairie-chicken-the," i.e. Prairie-Chicken.

BOB LEFT-HAND:

49. *t'síst'àγà*, "Mink."

50. *ts'à mizálá*, "beaver his-neckwear-the," i.e. Beaver-Collar. It is worth noting that *ts'à* (Ath. **tc'à**) is no longer freely used in Sarcee for "beaver," perhaps because of its phonetic identity with *ts'à*, "excrement" (Ath. **tc'àn**). For "beaver" they now say *mutc'à dik'àdi*, "his-tail it-is-broad-the, the broad-tailed one."

51. Nickname: *t'Lyíst'gùdlm*, "left somewhere-self-be-the," i.e. Left-handed.

DODGING-A-HORSE:

52. *dulit'cà' nágáts'it'La'*, "his (own)-horse he-runs-behind-for protection-the," i.e. Running-behind-his-Horse-for-Protection.

53. *gútlá:t'sinist'ùwu*, contracted from *gútlá it'sinist'ùwu*, "many-times one-has-shot-an (arrow)-at-him-the," i.e. Often-Shot-at (in battle.)

PETER BIG-PLUME:

54. *t'áγá t'sinsxàl'Là*, "in-the-water one-has-thrown-him-the," i.e. Thrown-in-the-Water.

55. *misí m'i'za*, "owl his-child," i.e. Owl-Child.

JACK BIG-PLUME:

56. *misí t'áγi*, contracted from *misí i't'áγi*, "owl he-is-flying-the (past)," i.e. Owl-which-had-Flown-away.

57. *k'a'tc'ádjiγà'*, "new-young-(buffalo-)bull," i.e. Recently-Turned-Bull. *tc'ádjiγà'* is a "two (or three) year old buffalo bull."

DICK NIGHT:

58. *milít'cak'á't'ágùdlí* (final vowel rises from middle to high), contracted from *-k'á át'ágùdlí*, "his-horse-plural it-is-bad-the," i.e. Bad-Horses, Owning-Bad-Horses.

JIM STARLIGHT:

59. *màγazínà náγist'lidziγa*, "wolf he-is-lean-diminutive-the," i.e. Lean-Wolf.

60. Nickname: *t'ásgì'na'*, "Policeman," said to refer to the red jackets of the Northwest Mounted Police. Jim Starlight is the policeman of the reserve.

JOE BIG-PLUME:

61. *di'k'ázâ'sná'*, contracted from *di'k'ázi isna-i*, "it-is-red-the he-eats-the," i.e. Eating-Red-Things.

JOHN WATERS (properly HEAD-ABOVE-WATER):

62. *dimázàk'a t'anánisda'*, "his (own) -knife-on on-top-again-he-sat-down-the," i.e. He-who-again-Mounted-his-Knife.

63. *na'á'lwú dicgâc*, "he-weaves-something-the (= spider) he-is-black," i.e. Black-Spider.

MANY-WOUNDS:

64. *gutLa di'xádik'ádi*, "many-times he-has-been-wounded-the," i.e. Often-Wounded.

PETER MANY-WOUNDS:

65. *i'k'âyí t'a'ik'i*, "(buffalo-) bull three," i.e. Three-Bulls.

66. Nickname: *súlà'*, "Woolly "

CHARLIE CROW-CHIEF:

67. *dlit'càk'a t'anánisda'*, "his (own) -horse-on on-top-again-he-sat-down-the," i.e. He-who-again-Mounted-his-Horse.

68. *tlidáγā'*, contracted from *tlidáγā'-i*, "dog-lip-hair (= whiskers) -the," i.e. Dog-Whiskers.

OSCAR OTTER:

69. *tlá'á'á' t'sinás'ini*, "everyone one-looks-at-him-the," i.e. Looked-at-by-Everyone.

GEORGE BIG-CROW:

70. *l'sudá k'ál'inà*, "boy male-be-the," i.e. Boy-Man, Manly-Boy.

PAT GRASSHOPPER (nicknamed SLIM):

71. *nìdáyál'áyà*, contracted from *l'áyà-l*, "prairie-chicken-wing-the," i.e. Prairie-Chicken-Wing.

JOHN BULL-COLLAR:

72. *nìs'tsinàs'ì yu'ì'láL*, "it-blows (= wind)-against he-runs," i.e. Running-against-the-Wind

GEORGE BIG-PLUME:

73. *dínà nìs'ì'l'Lyá*, "person he-is-small-diminutive-the," i.e. Small-Man.

ANTHONY DODGING-A-HORSE:

74. *di'k'álk'a t'anisda*, "he-is-white-on on-top-he-sat-down-the," i.e. He-who-mounted-a-White-Horse.

SLEIGH (Cree Indian living on Sarcee reserve):

75. *u'sudás-ùL*, "one-is-dragging-a (sleigh)-the," i.e. What-is-dragged-along, Sleigh.

BIG-KNIFE:

76. *mumájà' nùc'awù*, (first word assimilated from *mumázà*) "his-knife it-is-big-the," i.e. Big-Knife.

77. Nickname: *mázà* "Knify," abbreviated from 76.

78. *mìlì'càk'a tLani*, "his-horse-plural many-the," i.e. Having-many-Horses. This name refers to a fact, Big-Knife having by far the largest herd of horses on the reserve.

DAVID ONE-SPOT:

79. *ts'ágó-záyák'à*, contracted from *-k'à-l*, "weasel-foot-the," i.e. Weasel-Foot. Literally translated, "weasel" is "he-is-stone-smoothed-diminutive-the," i.e. "the one whose skin is smoothed (white) with a stone."

80. Nickname: *mìzì nìdùwà*, "his-name it-is-not," i.e. Having-no-Name. This name is also abbreviated to *mìzì* (cf. absolute *mìzì* "his name").

JOHN WHITNEY (also called JOHN ONE-SPOT):

81. *dìl'áni yì'ì'láL*, "he-flies-off-the (=eagle) he-runs," i.e. Running-Eagle.

WOLF-CARRIER (deceased):

82. *màγázínà^a γÁLì*, contracted from *màγázínà^a ì'γÁLì*, "wolf he-is-carrying-the," i.e. Wolf-Carrier.

BIG-BELLY (deceased chief):

83. *k'ut'adl'i'látci*, "down-hill-he-is-wont-to-run-the," i.e. Always-Running-Down-Hill.

LIZARD (deceased):

84. *ná^al'iniyá*, "Lizard" (relative diminutive in form, but etymology uncertain; connected by John Whitney with *t'iná* "trail").

PIEGAN-BOY (deceased):

85. *t'sidá:sgánát'sidá*, "Piegan-persons-boy-the," i.e. Piegan-Boy.

ROLLING-HILLS (deceased):

86. *gúdl'cúlá*, "country-is-rolling-the," i.e. Rolling-Country.

BULL-HEAD (deceased):

87. *l'ik'áts'i*, contracted from *l'ik'âyits'ihí*, (buffalo-) bull-head-the," i.e. Bull-Head.

EAGLE-RIBS (deceased):²

88. *dl'ánltc'ák'á*, contracted from *-tc'ák'á'l*, "eagle-ribs-the," i.e. Eagle-Ribs.

LITTLE-CHIEF (deceased):

89. *xàk'ldjlt's'ulá*, "Chief-Little."

LITTLE-BEAR (deceased):

90. *niniyáts'ulá*, "Bear-Little."

SPOTTED-EAGLE (in origin legend):

91. *dl'í'áni dl'idlci*, "eagle he-is-spotted-the," i.e. Spotted-Eagle.

CROW-FLAG (in origin legend):

92. *l'sá'si xà'yis'a*, "crow he-has-a (pole) -sticking-out-the," i.e. Having-a-Pole-sticking-out (of his painted tent) -with-a-Crow (for a flag).

EATING-TREE-TOPS (a woman):

93. *ut'uláγd gúsná*, "tree-point-the somewhere- (she) -eats-the," i.e. Eating-Tree-Tops.

STARLIGHT (a woman):

94. *lc'utci*, "it-is-wont-to-shine-like-a-star-the-the," i.e. She-who-Twinkles-like-a-Star.

COMMENTS ON THE NAMES

These names show clearly how well the Sarcee had assimilated the culture of the other Plains tribes with which they came into con-

² The Sarcee Indian from whom Dr. Goddard obtained most of his Sarcee text material. See P. E. Goddard, "Sarsi Texts," University of California Pub. in Am. Arch. and Eth., vol. 11, no. 3, 1915, p. 191.

tact. Almost any of them might have been borne by a Blackfoot Indian. Some of them may, in fact, be duplicated among the Blackfoot. Captured-Two-Guns or Two-Guns (no. 22), for instance, seems to bear the same name as the Two-Guns that Dr. Wissler has made the hero of a recent Blackfoot sketch,³ though it is not in the least likely that there is any direct connection between these two names. It is enough that they grew out of the same cultural soil and were patterned on a model common to the Sarcee, the Blackfoot, and other tribes of the region. We do not know enough about the typical method of Athabaskan nomenclature to compare the Sarcee names with the type or types which they must have gradually displaced. A set of names recently obtained from a Kutchin Indian of Fort Yukon, Alaska, suggests strongly that one of the most common types of Athabaskan names is the sobriquet, a name referring to some personal peculiarity, generally laughable, of the bearer and which is avoided in his presence because of its unflattering implication. Some interesting linguistic evidence on this point will be touched on later. Some of the Sarcee names, particularly the nicknames, are of this type, but the majority refer to the more important facets of Plains life. They imply the use of the horse, the economic predominance of the buffalo, warlike adventures, and the acquirement of sacred "medicines."

Perhaps it is worth noting that not a few of the Sarcee names, for instance "Against-the-wind he-runs" (no. 72), "Tree-tops the-one-who eats" (no. 99), and "On-his-knife the-one-who-again-mounted" (no. 62), consist of more than a single word, that is, are phrases rather than true compounds or simple word-syntheses. Their form would almost suggest that they were somewhat cumbrously translated from equivalent but more compact terms in other languages. In Algonkian, to which both Western Cree and Blackfoot belong, the possibilities of synthetic structure within the limits of a well-unified word are probably greater than in Athabaskan. Hence many Sarcee names seem better adapted to these languages than to Sarcee itself. However this may be, it is likely to be of significance that all the Kutchin names obtained are single words, including, of course, true compounds.

The Sarcee names here listed may be grouped into a number of fairly distinct types, though quite a number of them belong to more

³ See "Smoking-star, a Blackfoot Shaman" (in "American Indian Life," edited by Elsie Clews Parsons, 1922), p. 46.

than one type. Some of these types are much better represented than others.

I. *Names of Geographical Reference*: Big-Prairie (1); Rolling-Country (86).

II. *Tribal Names*: Sarcee (6); Blood-Sarcee (27); Sarcee-Woman (40); Piegan-Boy (85).

III. *Animal and "Medicine" Names*. These are grouped together because it is impossible to tell, without further information, whether a simple animal reference like "Mink" is concerned with a vision or not. Needless to say, the supernatural experience referred to is not necessarily an incident in the life of the bearer but may belong to the giver of the name. This also applies to names referring to war adventures or other incidents. Animal and "medicine" names may be conveniently subdivided into three groups. (a) *Simple or Qualified Animal Names*: Dog (26); Cow (30); Wolf (31); Gopher (46); Prairie-Chicken (48); Mink (49); Lizard (84); Little-Bear (90); Black-Spider (63); Lean-Wolf (59); Running-Antelope (4); Running-Eagle (81); Owl-which-had-flown-away (56); Dog-Whiskers (68). (b) *Names referring to "Medicines" and to Animals or Parts of Animals considered as "Medicine"*: Sacred Otter (17); Wolf-Carrier (82); Crow-Collar (7); Beaver-Collar (50); Bull-Collar (34); Bull-Shield (33); Crow-Flag (92); Kit-Fox-Tail (19); Crow-Ribs (32); Eagle-Ribs (88); Duck-Neck (39); Prairie-Chicken-Wing (71); Weasel-Foot (79); Thunder's-Child (8); Crow-Child (37); Owl-Child (55); Painted-Stone (35); Having-a-Magnificent-Charm (29); Having-a-Yellow-Painted-Tent (28); Heaven-Fire (23); Starlight (94); Big-Knife (76). Note the patterns "Crow-Collar" and "Owl-Child" as those most typically referring to the manitou relation. (c) *Buffalo Names*: Lamé-Bull (2); Bull-Fat (20); Buffalo's-Fetlock (24); Running-Calf (36; cf. a, nos. 4, 81); Recently-Turned-Bull (57); Three-Bulls (65); Bull-Head (87); also Bull-Shield and Bull-Collar listed under (b).

IV. *Names referring to Horses and Riding*: Rider (11); Single-Spotted-Pinto (15); Owning-Bad-Horses (58); Having-Many-Horses (78); First-to-Mount (47); He-who-Mounted-a-White-Horse (74); He-who-again-mounted-his-Horse (67). The name He-who-again-Mounted-his-Knife (62) belongs to the "riding pattern."

V. *War Names*: Captured-a-Gun-in-the-Middle (13); Captured-Two-Guns (22); Captured-an-Arrow (41); He-Stands-on-a-Gun (16);

He-who-Charged-against (the Enemy) (38); Often-Shot-at (53); Often-Wounded (64); Running-behind-his-Horse-for-Protection (52).

VI. *Names referring to Incidents or Objects*: Thrown-in-the-Water (54); Running-against-the-Wind (72); Always-Running-Down-Hill (83); Two-Youths (10); Broken-Knife (43); Sleigh (75); Eating-Red-Things (61); Eating-Tree-Tops (93). Some of these are likely to have reference to war or "medicine" experiences.

VII. *Names referring to Personal Characteristics*: He-is-a-Gambler (5); Singer (9); Carpenter (18); Policeman (60); Many-Womaned (12); Looked-at-by-Everyone (69); Manly-Boy (70); Small-Man (73); Little-Chief (89); Having-no-Name (80); Left-Handed (51); Toothed (25); Woolly (66); Roughy (44); Longy (45); Shorty (21); White-Headed (3); Split-Ears (14); Red-Foot (42). Most of the nicknames belong to this type. A great many names of this sort are also used by the Kutchin and Navaho.⁴

There are four names of our list which have a very special linguistic interest. These are:

<i>dzuLà'</i>	"Roughy"	(44)
<i>t'cújà'</i>	"Longy"	(45)
<i>sùlà'</i>	"Woolly"	(66)
<i>mázà'</i>	"Knify"	(77)

They are sobriquets directly formed with the "relative" and possessive suffix *-à'* (Ath. **-è'*) from monosyllabic adjectival or nominal stems. Now ordinarily the *-à'*, when suffixed to noun stems as a possessive, better relating, element, requires a possessive pronoun or other possessing stem before the noun which is possessed, e.g. *si-máz-à'*, "my knife" (from *más* "knife"), *si-t'ùw-à'* "my water" and *utá:s'i-t'ùw-à'* "leaf's water, tea" (from *t'ù* "water"). Adjective stems, unless frequently as the second element of compounds (e.g. *ts'ádzuL* "stone-rough, gravel"), required to be preceded by one or more prefixed elements (e.g. *dì-dzuL* "rough to the feel," *dì-t'cúj* "round and long, cylindrical"), i.e. they cannot easily be used as first-position elements. Sobriquets like *mázà'* and *t'cújà'*, therefore, are distinctly peculiar formations and seem to represent an archaic type of form that has survived from the time when the adjective (and verb) stem had a greater mobility than now and when the "relative" suffix (Ath. **-è'*, **-ε*, **-ě*) could be appended to a mono-

⁴ See the list of male personal names in The Franciscan Fathers, *A Vocabulary of the Navaho Language*, St. Michaels, Arizona, II, pp. 207-211.

syllabic stem as a sort of particularizing particle without the help of possessive pronouns or other limiting elements.

That these sobriquets are indeed of an archaic type seems to be demonstrated by the fact of their occurrence as independent words in Navaho and Chipewyan as well. Among the Navaho examples given by the Franciscan Fathers are personal names like *yě'l-i* "he who is slightly hunchbacked" (Ath. **γél-ě*), from *qēL* (i.e. *xēL*) "pack, load," possessive *bi-yael'* "his load" (Ath.* *xēL*, **mě-γél-ě*); *ch'ā'h-i* "he with the hat"; *gī'sh-i* "he with the cane"; also clan names like *k'ā'γ* "willow-clan" (Ath. **k'ay-ě*) and *yo'δ* "bead-clan" (Ath. **yo-ě*). These Navaho names are identical in form with Sarcee nicknames like *máz-d'* "Knify." Chipewyan examples taken from Father Legoff⁵ are: *gay-e* "le blanc, Whity" (cf. *de-l-gai* "white" as independent adjective-verb); *douè* (i.e. *due*) "le court, Shorty" (cf. independent *ne-d-douè* "short"); *zenn* "le noir, Reddy" (cf. independent *de-l-zenn* "black"). These Chipewyan nicknames are parallel to our Sarcee *t'cūj-d'*, *sūl-d'*, and *dzuL-d'*. In Kutchin the final short unaccented vowel dropped, as regularly in this dialect. The resulting monosyllabic adjective forms do not seem to be used entirely alone but require a preceding noun. Forms like *Charlie t'cā'* "ragged Charlie," *Sarah γo'* "round, plump Sarah," and *Jinny lāl'* "sloppy Jinny" are current today. Kutchin forms like *γo'*, *lāl'* are regular reflexes of Ath. **γ(w)enj-ě*, **lēl-ě*, which belong to the same general type as our Sarcee, Navaho, and Chipewyan examples.

VICTORIA MEMORIAL MUSEUM,
OTTAWA, CANADA

COWRY SHELLS FROM ARCHÆOLOGICAL SITES IN ONTARIO

ALTHOUGH shells of other small oceanic molluscs¹ have been from time to time found at both pre- and post-European sites in Ontario, no cowry shells were discovered until about 1910, when one was plowed up in a field near the "serpent mound," in Peterborough county.² This shell, however, may have no possible connection with

⁵ Le Rév. Père Laurent Legoff, *Grammaire de la Langue Montagnaise*, Montreal, 1889; see p. 30.

¹ *Marginella apicina*, *Oliva literata*, *Purpura lapillus*, and *Natica duplicata*.

² Montgomery, Henry, Recent Archæological Investigations in Ontario, *Transactions of the Canadian Institute*, Vol. ix, Toronto, 1910, pp. 7 and 12; Fig. 6, Plate iv.

the mound. In the summer of 1923 I saw two cowry shells (probably Money cowries, *Cypræa moneta*) in a small collection of archæological material obtained from a post-European Tionontati or Tobacco Nation Indian site, on lot 14, concession II, Collingwood township, Grey county. One of the shells was found on the surface and the other came from one of the cultural deposits or refuse-heaps at the site. The shells are not perforated for use as ornaments. Both are white with a bluish centre. Shells of *C. moneta* (except "dead" specimens) are of a yellowish color. The white color of these shells, therefore, may be due to long burial in the ashes composing the refuse-heaps.

It has been suggested that these cowry shells were introduced among the Indians by Hudson Bay Company traders. The site where they were found, however, belongs to a much earlier period (*ca.* 1639-1649) and the shells were probably traded to the Indians by the French.

It is of interest to note that the discovery of these additional specimens in Ontario makes a total of ten cowry shells from archæological sites in Canada and the eastern United States.³ Probably others have been found, but these are the only specimens of which I have any record.

W. J. WINTEMBERG.

VICTORIA MEMORIAL MUSEUM,
OTTAWA, CANADA.

³ See J. V. Brower, *Prehistoric Man at the Headwaters of the Mississippi River*, Minnesota Historical Society Collections, vol. VIII, part 2, St. Paul, 1896, p. 254, and Plate VIII; and Clarence B. Moore, *Aboriginal Sites on Tennessee River*, *Journal of the Academy of Natural Sciences of Philadelphia*, Vol. XVI, Philadelphia, 1915, pp. 293-294.

For an interesting paper on the distribution of the use of cowry shells, see J. Wilfrid Jackson, *The Use of Cowry-Shells for the Purposes of Currency, Amulets, and Charms*, *Memoirs and Proceedings of the Manchester Literary and Philosophical Society*, Vol. LX, Manchester, 1917, No. XIII, pp. 1-72.

ANTHROPOLOGY AT THE NEW YORK MEETING AND PROCEEDINGS OF THE AMERICAN AN- THROPOLOGICAL ASSOCI- ATION

The American Anthropological Association held its twenty-second annual meeting at the Explorers' Club, 47 West 76th Street, New York City, December 27 and 28, 1923, in conjunction with the American Folk-lore Society and the Maya Society.

Two meetings of the Council were held with President Hough in the chair.

COUNCIL MEETING, DEC. 27, 9 A. M.

The following reports were read and accepted:

REPORT OF THE SECRETARY

The proceedings of the last annual meeting of the Association were published in the *American Anthropologist* for January-March, 1923. There has been no special meeting of the Association nor of the Council during the year.

The anthropological membership of the Division of Anthropology and Psychology in the National Research Council is now as follows:

To serve until July 1, 1924: B. Laufer, J. W. Fewkes, A. E. Jenks.

To serve until July 1, 1925: M. H. Saville, F. G. Speck, J. R. Swanton.

The Association has lost by death during the year five members: Miss Adela C. Breton; Miss Alice Fletcher, a founder; Mrs. Martha J. Herrick; Dr. J. B. McGee; and Dr. George R. Stetson.

Six members have resigned, five have died, seven have been dropped, and sixty-one new members have been added, making a net gain of forty-three. The membership at present is as follows:

Honorary members.	5
Life members.	12
Regular members	581
	<hr/> 598

Respectfully submitted,

ALFRED V. KIDDER,
Secretary.

REPORT OF THE TREASURER

Receipts

Balance on hand, December 21, 1922.....			\$1,330.20
American Ethnological Society.....	796.00		
Annual Membership dues:			
1918.....	5.00		
1919.....	5.00		
1920.....	5.00		
1921.....	11.00		
1922.....	80.40		
1923.....	2256.41		
1924.....	99.24	2462.05	
Sale of publications.....		513.57	
Reimbursements.....		406.11	
Interest.....		20.32	4198.05
			<u>\$5528.25</u>

Disbursements

Geo. Banta Publishing Co.			
Printing, etc.....	\$3362.52		
Foreign postage.....	80.87		
Storage, Nov. 1922-Dec. 1923....	130.00	\$3563.39	
Maurice Joyce Engraving Co.....		498.29	
Drawings.....		32.50	
Editor, Secretary & Treasurer's expenses.....		132.45	
Miscellaneous expenditures.....		26.20	
Total disbursements....	\$4252.83		
Cash on hand.....	1275.42		\$5528.25

Resources

Cash on hand Dec. 17, 1923.....			\$1275.42
Due from sales:			
1922.....	\$ 6.18		
1923.....	188.34	\$ 194.52	
Due from dues:			
1922.....	30.00		
1923.....	174.00	\$ 204.00	
Due from A. S. W.			
Vol. 24, no. 3—Vol. 25, nos. 1-3....	200.00		
Due from A. E. S. dues.....		200.00	
Due from A. E. S. and A. S. W. after vol. 25,			
no. 4 appears.....	152.00		
Due from reimbursement for Memoir 29.....		378.60	
Due from miscellaneous reimbursements.....		22.27	1263.39
			<u>\$2538.81</u>

Liabilities

Membership dues for 1924 already paid.....	99.24	
Cost of Anthropologist Vol. 25, no. 4 (Est.).....	550.00	
Total liabilities.....	<u>\$649.24</u>	
Net excess resources over liabilities.....	<u>1889.57</u>	<u>\$2538.81</u>

Cost of Publications

American Anthropologist, Vol. 24, no. 3.			
Printing.....	\$ 535.57		
Engravings.....	<u>124.46</u>	\$ 660.03	
Reimbursements.....	<u>26.26</u>		\$ 633.77
American Anthropologist, Vol. 24, no. 4.			
Printing.....	\$ 378.30		
Engravings.....	<u>155.65</u>	\$ 533.95	
Reimbursements.....	50.50		\$ 483.45
American Anthropologist, Vol. 25, no. 1.			
Printing.....	\$ 556.92		
Engravings.....	<u>57.21</u>	\$ 614.13	
Reimbursements.....	111.88		\$ 502.25
American Anthropologist, Vol. 25, no. 2.			
Printing.....	482.26		
Engravings.....	83.21	\$ 565.47	
Reimbursements.....	48.86		\$ 515.61
American Anthropologist, Vol. 25, no. 3.			
Printing.....	\$ 498.06		
Engravings.....	<u>28.00</u>	\$ 526.06	
Reimbursements.....	<u>82.23</u>		\$ 443.83
Memoir 29.			
Printing.....	\$ 365.77		
Engravings.....	<u>82.26</u>	\$ 448.03	\$ 448.03
Net Cost.....			<u>\$3026.94</u>
Reprints and distribution.....			<u>545.64</u>
Total Cost.....			<u>\$3572.58</u>

PERMANENT FUND

Receipts

Balance, Dec. 21, 1922.....		\$1,543.37
Interest, April, 1923.....	\$ 8.48	
Interest, Oct., 1923.....	<u>6.37</u>	<u>12.75</u>
		<u>\$1,560.37</u>

Investments

Liberty bonds.....	\$ 388.12	
W. S. S.....	41.87	429.99
Cash awaiting investment.....		30.38
Loan to general fund.....		<u>1100.00</u>
		<u>\$1560.37</u>

The accounts of the Treasurer, A. V. Kidder, have been examined and found correct.

E. A. HOOTON,

W. K. MOOREHEAD,

Auditing Committee

Respectfully submitted,

ALFRED V. KIDDER,

Treasurer.

REPORT OF THE EDITOR

During the past year the same printers have been employed as in the year preceding, The George Banta Publishing Co., of Menasha, Wis. As usual, four numbers of the *Anthropologist* (vol. 24, no. 4, and vol. 25, nos. 1, 2, and 3) have been issued. Vol. 25, no. 4 is in type and has been returned to the printers to be paged up. During the past year each number of the *Anthropologist* has been increased in size by one signature. The editor is also happy to be able to report the resumption of the issue of the *Memoirs*. In accordance with the vote of the Association at the Philadelphia meeting in 1920 the new *Memoirs* are to be issued separately instead of as parts of volumes, i.e., they are to form one series. Since the separate papers in the old series numbered twenty-eight, in order to articulate the new series with the old the first of the new series is numbered twenty-nine. This *Memoir* is entitled "The Concept of the Guardian Spirit in North America," and is by Ruth Fulton Benedict. The cost of publication was met by Dr. Elsie Clews Parsons. *Memoir 30*, "The Blood Sacrifice Complex," is by Dr. E. M. Loeb, who bears the greater part of the expense connected with it. The manuscript of a third *Memoir* is in the hands of the editor for publication in 1924, and a fourth has been promised.

Unforeseen circumstances have prevented the editor from devoting as much care to the 1923 *Anthropologist* as he had intended and they now make it necessary for him definitely to resign the charge of the Association's publications. Without presuming to dictate a policy to his successor, a few suggestions based on the experience of the past three years may be in order.

In the first place it should be understood that the publications of our Association will absorb as much time as any able-bodied student can give to them. Every department is capable of improvement and in most cases of considerable improvement. In fact, to

make our publications what they ought to be, and what we all hope they may become, there should be a board of specialists in charge, covering the different branches of anthropology and the various sections of the globe. While it must be remembered that one man who will attend to his job is of more value than fifty better informed men who shirk and that where responsibility is divided shirking is apt to develop, it appears to me that some way may be devised through which more specialized experience can be brought to bear on each publication. An ideal solution would be the appointment of one salaried editor to devote his entire time to the publications and carry the responsibility for them and a supporting body of volunteer assistants to give him expert counsel in their several lines. This however, is beyond the means of the Association at the present time.

It is evident that there is now wide interest in anthropological subjects, and we must take every advantage of it. Fearful of running behind financially, I have perhaps withheld expense unnecessarily of late, but the journals must not be starved for the sake of a large surplus, and during the coming year I think the Association can afford to pay for all illustrations, except in a few unusual cases, and also to increase the size of the *Anthropologist* by one sixteen-page signature. I am inclined to favor the policy of meeting all of the bills of the *Anthropologist* out of our regular income, leaving the financing of the *Memoirs* largely to those desiring to do something additional. In these matters the advice and consent of the Treasurer are of course essential.

It was my original belief that the department devoted to news, the Anthropological Notes, should be much increased in order to furnish a means of communication between anthropologists, but experience indicates that such a function cannot be performed with much success in a journal which appears only four times a year.

In concluding my editorial work I wish to express my appreciation of the help I have received from my associate editors, the members of the committee on publication, and all connected with this Association to whom I have had occasion to appeal for advice and assistance. I am only too well aware of the extent to which I have fallen short in my attempts to give the Association the mediums of expression which it ought to have but believe that everything may be hoped of the future.

Respectfully submitted,

JOHN R. SWANTON,

Editor.

The Treasurer asked and received permission to defer the presentation of the budget for 1924 until after consultation with the new Editor. He was authorized to present the budget for approval to the Executive Committee.

It was moved and passed that:

The Council as a body act during the second Council Meeting as a nominating committee.

The following new members were elected: Laura M. Bragg, Joseph D. Taylor, Margaret E. Bard, D. S. Bullock, E. R. F. Johnson, G. E. Mayo, A. H. Fausset, Frans Blom, Mary Roberts Clark, S. Umehara, G. Uchiyama, F. Ortiz, K. Young, D. S. Davidson, D. Hooker, B. J. Phillips, K. Ruppert.

The following committees were appointed:

On resolutions to the retiring editor: P. E. Goddard, F. W. Hodge.

On resolutions: F. Boas, W. K. Moorehead, M. H. Saville.

On audits: E. A. Hooton, W. K. Moorehead.

COUNCIL MEETING, DEC. 27, 5 P. M.

It was moved and passed:

That a sub-committee of the nominating committee consisting of A. V. Kidder, F. Boas, and A. M. Tozzer be appointed to make nominations for the Council and to adjust the length of terms of those already serving on the Council in such a way that the constitutional provision that one-fourth of the councillors be elected annually, may in future be more easily complied with.

That the Committee of the Association on the American School in France of Prehistoric Studies be given power to act in the name of the Association in all matters regarding the relation between the Association and the School.

That the by-law of the Association requiring Annual Meetings to be held in the East be rescinded.

The report of Charles Peabody, Director for 1922 of the American School in France of Prehistoric Studies, was presented to the Council.

R. B. Dixon, Chairman of the Committee to investigate the status of Anthropology in United States government institutions presented a progress report.

N. M. Judd, Chairman of the Committee on the prevention of vandalism in Southwestern ruins presented a progress report and was directed by the Council to make a final report to the Executive Committee for publication in the *Anthropologist*.

ANNUAL MEETING, DEC. 28, 2.30 P. M.

The following list of officers was presented by the Nominating Committee:

President: Walter Hough.

Vice President (1927): G. G. MacCurdy.

Secretary-Treasurer: A. V. Kidder.

Editor: Robert H. Lowie.

Associate Editors: E. W. Gifford, F. G. Speck.

Executive Committee: H. J. Spinden, J. R. Swanton, M. H. Saville.

Council (new members): Martha W. Beckwith, Ruth Benedict, D. Cadzow, C. B. Davenport, Esther S. Goldfrank, G. B. Grinnell, Erna Gunther, A. I. Hallowell, M. J. Herskovits, F. LaFlesche, R. Linton, J. H. McGregor, B. Oetteking, A. C. Parker, Gladys Reichard, A. Skinner, R. J. Terry, T. W. Todd.

Representatives of the Association on the National Research Council to serve for three years from July 1, 1924: A. Hrdlička, A. V. Kidder.

Delegates of the Association to Section H. of the A. A. A. S.: N. C. Nelson, F. Boas.

The Council (after addition of new members and revision of terms of those already serving): F. Boas, W. H. Holmes, S. Culin, R. B. Dixon, J. W. Fewkes, F. W. Hodge, A. L. Kroeber, C. Wissler, W. C. Farabee, B. Laufer, G. G. MacCurdy, F. C. Cole, A. V. Kidder, R. H. Lowie (*ex officio*); S. A. Barrett, Martha W. Beckwith, Ruth Benedict, D. Cadzow, C. B. Davenport, Esther S. Goldfrank, G. B. Grinnell, Erna Gunther, A. I. Hallowell, M. J. Herskovits, A. E. Jenks, N. M. Judd, F. LaFlesche, R. Linton, J. H. McGregor, B. Oetteking, A. C. Parker, Gladys Reichard, A. Skinner, R. J. Terry, T. W. Todd (1924); R. T. Aitken, C. M. Barbeau, R. B. Bean, B. Cummings, S. Hagar, G. G. Heye, E. A. Hooton, B. T. B. Hyde, A. B. Lewis, S. K. Lothrop, S. G. Morley, J. E. Pearce, G. H. Pepper, F. G. Speck, L. Spier, H. J. Spinden, F. Starr, W. D. Wallis, H. N. Wardle, H. H. Wilder (1925); H. H. Donaldson, G. Engerrand, W. Gates, P. E. Goddard, S. J. Guernsey, C. E. Guthe, H. U. Hall, E. S. Handy, C. L. Hay, J. P. Harrington, M. R. Harrington, W. W. Hyde, L. W. Jenkins, Theresa Mayer, T. Michelson, W. F. Ogburn, B. F. Schappelle, J. B. Stetson, A. M. Tozzer, S. Trotter, E. P. Wilkins (1926); H. Bingham, E. W. Gifford, G. B. Gordon, C. H. Hawes, D. Jenness, Rachael W. Lothrop, J. A. Mason, W. C. Mills, C. B. Moore, W. K. Moorehead, N. C. Nelson, C. Peabody, E. C. Parsons, E. K. Putnam, E. Sapir, F. H. Saville, M. H. Saville, H. I. Smith, L. R. Sullivan, H. Webster, C. C. Willoughby (1927).

The above officers and members of the Council were declared elected, and the terms of service of councillors already serving were declared revised, by a vote ordered cast by the Secretary.

The following committees were appointed:

Joint Committee on Relations with Central States Section: C. Wissler, G. G. MacCurdy, B. Laufer, S. A. Barrett.

Committee on Program: F. G. Speck (Chairman), A. V. Kidder (Sec'y *ex-officio*), P. E. Goddard, H. U. Hall, M. H. Saville, C. M. Barbeau, S. J. Guernsey, N. M. Judd, S. K. Lothrop.

Committee on Policy: Clark Wissler (Chairman), W. H. Holmes, S. Culin, G. B. Gordon, W. C. Mills, C. Peabody, F. Boas, J. W. Fewkes, A. E. Jenks, E. C. Parsons, A. M. Tozzer.

Committee on Publication: Walter Hough (Chairman *ex-officio*), R. H. Lowie (Sec'y *ex-officio*), S. A. Barrett, S. Culin, J. W. Fewkes, A. A. Goldenweiser, F. W. Hodge, E. A. Hooton, A. Hrdlička, A. E. Jenks, A. L. Kroeber, B. Laufer, G. G. MacCurdy, W. K. Moorehead, S. G. Morley, E. Sapir, H. J. Spinden, H. N. Wardle, C. Wissler. *Advisory Sub-committee:* F. W. Hodge (Chairman), J. W. Fewkes, B. Laufer.

Committee on Finance: R. B. Dixon (Chairman), Wm. Gates, G. G. Heye, C. B. Moore, E. E. Ayer, W. H. Furness, C. L. Hay, A. M. Huntington, J. B. Stetson, Jr.

The following papers were presented:

The situation at the Cahokia Mounds; The National Research Council and field-work. Warren K. Moorehead.

Archaeological correlations. H. J. Spinden.

Among the Southern Pai Ute fifty years ago. F. S. Dellenbaugh.

A new archaeological field in Utah. Neil M. Judd.

Texas kitchen middens. J. E. Pearce.

The East Indian Hussay as celebrated in Jamaica. Martha M. Beckwith.

The mythology of the Southwest. Ruth Benedict.

Micmac folklore. Elsie Clews Parsons.

Some representative legends of Texas and the Southwest current among Anglo-Saxon Americans. J. Frank Dobie.

The British Historical School. Robert H. Lowie.

Principles of the Wiyot language. Gladys A. Reichard.

Recent progress in Mayan studies. William Gates.

The explorations of Captain I. H. Cady at Palenque in 1846 Marshall H. Saville.

New Light on Maya Chronology. H. J. Spinden.

Explorations in the Maya area. Frans Blom.

A preliminary consideration of the culture areas of Africa. Melville J. Herskovits.

Tewa kin, clan and moiety. Elsie Clews Parsons.

A Palaeolithic practice. Robert H. Lowie.

Progress of the Pueblo Bonito expedition. N. M. Judd.

Recent Chilean field-studies among the Yahgans and Onas. John M. Cooper.

New excavations in Jacob's Cavern, Pineville, Mo. N. C. Nelson

The following papers were read by title:

Nature as reflected in the art of the Palaeolithic Cave Man. George Grant MacCurdy.

House-types in the Neolithic period in Northern Europe. R. R. Schmidt.

The effect of race and environment on the physical and mental development of our Mexican immigrants. Franklin Cressey Paschal and Louis R. Sullivan.

The study of Maya antiquities as an aid to chronological determinations in other areas. A. V. Kidder.

The second season of excavations by the American School in France. Charles Peabody.

The following resolutions were offered and passed:

(1) Be it resolved that the American Anthropological Association hereby extends its sincere appreciation of the courtesies extended by the Explorers' Club upon the occasion of its 1923 annual meeting. The Secretary is hereby directed to transmit a copy of this resolution to the Explorers' Club.

(2) Be it resolved that the members of the American Anthropological Association hereby extend their hearty thanks to the local members of the Association for the very complete arrangements made for the meeting and for the hospitable entertainment afforded. The Secretary is hereby directed to notify the local committee of this vote of appreciation.

(3) The Association has lost one of its most active and distinguished members in the death of W. E. Myer who had made important contributions to our knowledge of the prehistoric peoples throughout the southeastern portion of the United States. The Association extends its sympathy to the surviving members of his family and directs that this resolution be spread upon our permanent records and that a copy of the same be sent to the family.

(4) Through the death of Miss Alice C. Fletcher, the American Anthropological Association has lost one of its Founders, and one who consistently maintained the highest ideals of our science. Miss Fletcher evinced a kindly interest in the work and progress of the younger anthropologists and never failed to buoy up with new enthusiasm her co-workers. Be it resolved that this testimonial of our regard for Miss Fletcher's high character and scientific attainments be spread upon the records of our Association.

(5) *Whereas*, Dr. John R. Swanton has been compelled for personal reasons to resign the office of Editor of the American Anthropological Association, which he has held since the beginning of 1921, and

Whereas, the officers and members of the Association, appreciating the great sacrifice of time, labor, and strength that Dr. Swanton has made in the interest of the Association, therefore be it

Resolved that the Council of the Association, at the annual meeting held in New York on December 27-28, 1923, having received and accepted the

resignation of Dr. Swanton with profound regret, hereby expresses its deep appreciation of his efficient and valued service always so unselfishly given to the Association, not only as Editor of the *American Anthropologist* and the *Memoirs* during the period above mentioned, but as Associate Editor for eleven years previously.

A. V. KIDDER,
Secretary.

ANTHROPOLOGICAL NOTES

THE UNIVERSITY OF CALIFORNIA, Department of Anthropology, has recently had a party of five investigators at work in the mounds between Tulare Lake and Buena Vista Lake, in the southern San Joaquin Valley. The expedition amplified the results of the Department's earlier investigators, Philip Mills Jones in 1899 and Nels C. Nelson in 1909, and prosecuted the investigations to a point which warrants the publication of a comprehensive paper on the archaeology of the region. The Department hopes to incorporate in this paper the results of study of several fine private collections in the region in question. The party recently returned from the field was composed of E. W. Gifford, W. Egbert Schenck, Mrs. Schenck, Eugene Golomshtok, and W. D. Strong.

Dr. TRUMAN MICHELSON, ethnologist in the Bureau of American Ethnology and Professor of Ethnology at George Washington University, has been appointed as Instructor in Anthropology at Columbia University for the summer session of 1924.

*MR. OWEN CATTELL assisted by Mr. Donald A. Cadzow of the Museum of the American Indian, Heye Foundation, and by Lorenzo Chaves, a Zuñi Indian, took motion pictures of some of the Zuñi ceremonies. All the important arts and industries as well as some ceremonies are illustrated.

AMERICAN SCHOOL OF PREHISTORIC RESEARCH IN EUROPE

Under the joint auspices of the Archaeological Institute of America and the American Anthropological Association the School of Prehistoric Research was founded in 1920.

Students of both sexes are admitted from both North and South America; enrollment may be for the summer term, or for the entire year. There is no tuition fee.

The work of the summer term consists of excavations sufficient to give the students first-hand knowledge of methods and culture sequence; excursions to the most important Paleolithic, Neolithic, Bronze, and Iron-Age sites, the study of Museum collections; and lectures given not only by the Director of the School, but also (at various places) by distinguished European anthropologists.

After consultation with the Director, students may choose for the winter term the center of learning which may offer them the best

facilities for the working out of the problems, in which they are interested.

The fourth year will open on July 1st, 1924. Applications for admission to the School should be sent to the Chairman of the Governing Board, Dr. George Grant MacCurdy, Yale University, New Haven, Connecticut.

FIELD MUSEUM LEAFLETS

In the beginning of 1922 the Field Museum of Natural History inaugurated a new series of publications known as Leaflets. This is a popular series in distinction from the scientific series of publications in which new material or new results are made known in the interest of science, and makes a direct appeal to the general public. The leaflets are intended to distribute accurate knowledge with reference to the Museum collections, and are illustrated by photogravures. The Department of Anthropology has so far issued twelve such leaflets. A series of four deals with the religious life of the North American Indians, and contains an account of the religious beliefs and principal ceremonies of the Pawnee. It will correct many current popular errors in regard to the religious notions of the Indians. The first (No. 5 of the series) contains a description of the Pawnee pantheon and of the ceremony of welcome to the returning gods which was performed when the first thunder was heard in the spring. The second (No. 6 of the series) describes the sacrifice of a captive maiden to the Morning Star and explains the beliefs responsible for this cruel practice. The third (No. 7 of the series) gives an account of the important ceremonies by which the tribe was purified, and the fourth (No. 8 of the series) describes the spectacular rites by which the medicine-men of the tribe renewed their powers and initiated new members into their order.

Two leaflets have been published illustrating material in the Joseph N. Field Hall; one on New Guinea masks, the other on the use of sago in New Guinea. The former describes briefly some of the more common types of masks, many of which are on exhibition in the hall. Probably the most striking masks used anywhere in the island are the tall feather masks occupying the case in the center of the hall.

As many villages in the low part of the island depend on the sago palm, their principal food supply, an account of its preparation and methods of cooking and serving gives some idea of the simple life of

these native peoples. Both leaflets are illustrated by photographs showing the natives actually using the various objects described.

Three leaflets are devoted to the culture of Japan. The first of these (No. 3 of the series) is a general description illustrated by 6 plates of the Japanese collections installed in Gunsaulus Hall, and including prints, sword mounts, armor, costumes, wood-carvings, paintings, and tapestry. The two others (Nos. 11-12 of the series) have reference to four exhibitions of color prints known as *surimono*, each of which is on view for three months during the year. These prints illustrate various phases of Japanese life and thought. The New Year's festival described in detail in Leaflet No. 11 is one of the most interesting celebrations in the yearly calendar. No. 12 contains a full account of the costumes worn by peasants, civilians, and nobles. Each of these is illustrated by four plates. Two other leaflets of this series dealing with Gods and Heroes and Temples and Houses are soon to come out.

A Chinese monumental gateway exhibited in Stanley field Hall is figured and described in the first number, while No. 2 gives a brief account of a Philippine Forge Group. Use of Human Skulls and Bones in Tibet (No. 10) is written with reference to a unique ceremonial bone apron from Tibet composed of 41 plaques carved from human femora and elaborately decorated with figures and designs. The essay gives a great deal of information on the sacred use of human skulls in ancient and modern times and in all parts of the world.

The Department has also issued the first part of its Guide which gives a description of the new Hall of Oriental Theatricals containing exhibits from China, Tibet, Java, and Ceylon.

AN ENCYCLOPAEDIA OF SOCIAL SCIENCE

At the recent meeting of American social science associations, held in Washington, a project for the publication of an encyclopedia of the social sciences was offered for consideration. The Sociological Society appointed a committee to confer with representatives of other groups. The Economic Association approved discussion of the enterprise will presently announce its conferees. The Political Science Association will act upon the proposition, through its Council, at their first meeting. Members of other bodies have expressed their interest in promoting such cooperation.

It is significant that scholars in various branches of social science feel the need of an authoritative summary of results in related fields.

It is timely that social investigators undertake an inventory of their collective work when the world is asking for proven material with which to build sound economy and government. It is encouraging that social engineers perceive the necessity of defining more accurately their several problems. This gesture may stimulate greater progress in the science of society, as the French *Encyclopédie*, by consolidating the best information of its day, turned men's thought to more careful study of the world of nature. The social sciences have outgrown the stage of schools of philosophy. They are now ready to begin organizing many scattering items of knowledge into a cogent body of principles.

The general plan suggested contemplates bringing together within the compass of a few volumes an analysis of the more important aspects of social life. This would probably include in part findings from adjacent fields of anthropology, history, sociology, economics and politics, comparative philology and aesthetics, religion, law and ethics. An example of even wider coordination is presented by the *Encyclopédie Scientifique*, now being published with the aid of the principal learned bodies in France. Whether or not the American work contemplated shall take the form of a dictionary of terms, a sequence of general articles, or a condensed series of outlines remains to be decided. In any event, it is agreed that each section shall present within the space allowed, the most thorough treatment available. Details of scope and method must obviously be placed in the hands of responsible editors.

To develop the scheme indicated, it is proposed that learned societies dealing with human relations each appoint a committee of three to collect and compare the opinions of their co-workers concerning the project. These committees can then exchange notes through a joint secretary. By May first a combined committee should be organized to consider general aspects of the work, such as scope and method, finance and editorial management. A conference of the whole committee during the summer may be arranged later. Results of such deliberation should be ready by next October to be put into the form of definite recommendations for discussion at the Holiday meeting of the constituent societies. If endorsed or modified at that time, the project will be ready for active promotion under competent direction.

Meanwhile, to bring this matter to the attention of American

students of the social sciences, and to obtain their prompt response, the following proposals are offered:

1. That every society interested print a copy of this notice in the next issue of its official journal.
2. That all executive officers of these societies be and are hereby urged to secure immediate appointment of three representatives from their body, whose names and addresses should be forwarded at once to the undersigned.
3. That these committees proceed forthwith to obtain from members of their societies expressions of opinion upon four points, viz.:
 - a. Is an encyclopedia of the social sciences desired?
 - b. Suggestions concerning general scope and method of such work—subject matter, treatment and form.
 - c. Plans for financing the undertaking.
 - d. Names of competent persons for
 - i. Advisory Board
 - ii. Editorial Staff
 - iii. Contributors of special articles.

Pending organization of the joint committee to handle correspondence, communications and inquiries may be addressed to the undersigned:

HOWARD WOOLSTON, University of
Washington, Seattle, Wash.
WM. F. OGBURN, Columbia University,
New York City.
ALEXANDER GOLDENWEISER, New School for
Social Research, New York, N. Y.

Members of the Sociological Society are urged to assist their committeemen by sending suggestions at once to one of the above.

RUSSIAN ANTHROPOLOGISTS

Since 1914 the constant succession of the Great War, revolution and recent famine has undermined all branches of science in Russia. Anthropology has suffered the loss of four of her students.

F. K. VOLKOV, Professor of Anthropology at Petrograd University; President of the Anthropological Society and Curator of the Ethnological section of the Russian Museum of Alexander III, died in July, 1918

A. D. ELKIND, Editor of the Russian Anthropological Journal and Secretary of the Society of Natural History, Anthropology, and Ethnography in Moscow, died in November, 1920.

N. A. YANSIK, Russian ethnologist, died in December, 1921.

DIMITRII NICOLAIVITCH ANUCHIN, Russian anthropologist, died in the summer of 1923. He was born in Petrograd on August 27, 1843. His career began as a student of history at the University of Petrograd in 1860, but owing to illness he was compelled to discontinue his studies and go abroad. Three years later he resumed work at Moscow University, this time specializing in zoology. In 1867 he graduated and in 1873 obtained his Master's degree in zoology.

Though he had been interested during this time in anthropology, his real work in this field did not commence until 1875, when, under the direction of A. P. Bogdanov, he published his work on the physical anthropology of the Ainu. A year later he was sent by Moscow University to England, France, Germany, and Italy, where he studied museum collections and anthropology.

In 1880, Anuchin became the first professor of physical anthropology at Moscow University, and lecturer on archaeology at the Moscow Archaeological Institute. He also served as President of the Society of Natural History, Anthropology, and Ethnography, and was a Fellow of the Academy of Science. Several foreign universities made him Doctor *honoris causa*.

Dr. Anuchin is the author of numerous scientific works in zoology, anthropology, and archaeology, the most important of which are the following:

Anthropomorphic Apes and Lower Races of Humanity.

Ethnology of the Balkan Peninsula.

Notes on the Ethnology of Siberia.

Paleolithic Age in Russia.

Dr. Anuchin was not only a scholar of the first rank in Russia; he is also known as the father of modern anthropology in that country, occupying a position comparable to that of Boas in America. His work as a professor, lecturer, field-worker, and adviser in practically all investigations makes him a prominent figure in the anthropology not only of Russia but of the world.

EUGENE A. GOLOMSHTOK

ANTHROPOLOGY AT THE TORONTO MEETING OF THE BRITISH
ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE,
AUGUST, 1924

The ninety-second meeting of the British Association for the Advancement of Science is to be held at Toronto, Ont., from August

6th to 13th, 1924. The University of Toronto is in charge of the local arrangements. A number of distinguished British anthropologists have signified their intention to be present at the meeting of Section H (Anthropology) and it is hoped that many American and Canadian anthropologists will be able to attend as well. One of the interesting features of the program will be a discussion on "Mental Character and Race," in which the psychologists will participate. There will probably also be a discussion on cultural diffusion, introduced by Prof. Elliot Smith.

Those wishing to take part in the proceedings may do so on a payment of \$7.50, made before or at the Annual Meeting; such members are also entitled to receive the Report of the Meeting. Those wishing either to attend the meeting without receiving the Report or to receive the Report without attending the meeting will be required to pay a fee of \$5.00. For information relative to the meeting of the Association, inquiries should be addressed to Major John Mood, Local Secretary, B.A.A.S., Physics Building, University of Toronto, Toronto, Ont.; on matters referring specifically to Section H, information may be obtained from Dr. E. Sapir, Local Secretary of Section H, B.A.A.S., Victoria Memorial Museum, Ottawa, Ont.

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NEW SERIES

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No. 2

SUN-SYMBOLS OF THE TOMB-SCULPTURES AT LOUGHCREW, IRELAND,¹ ILLUSTRATED BY SIMILAR FIGURES IN SCANDINAVIAN ROCK-TRACINGS

By GEORGE T. FLOM

THE figures that appear incised on stones in ancient Irish cairns seem to be regarded by archaeologists at present as mainly or wholly ornamental in purpose. Of those at Sliabh-na-Calliaghe, Loughcrew, near Oldcastle, County Meath, William Frazer says in the introduction to his account of them: "It appears to me useless to attempt any satisfactory explanation of these hidden meanings, if such there be, in the present state of our knowledge, and it is preferable to regard them as decorative or ornamental tracings."² A similar view was expressed for those at New Grange and Dowth, near Drogheda, County Meath, by George Coffey in the publication of his investigation of these in 1890.³ Referring to a suggestion by W. Wilde that they may be "ideographical or hierographic, in the strict sense of the word, that is sacred carvings," and quoting words from Sir R. C. Hoar on their similarity to the ornaments on ancient British urns of the tumuli of Wiltshire, Coffey says: "I have held the opinion for some time that the conditions of the scribings at New Grange are fully satisfied by those of ornament. That in fact these markings simply represent the style of decoration of the period and

¹ Published in *Proceedings of the Society of Antiquaries of Scotland*. Vol. XXVII, 1892-1893. The illustrations are from ground-plans and water-color sketches by G. V. du Noyer of the Geological Survey of Ireland. They were published by William Frazer in connection with an article on them entitled: "Notes on Incised Sculpturings on Stones in the Cairns of Sliabh-na-Calliaghe, near Loughcrew, County Meath, Ireland."

² L.c., in Note I, p. 296.

³ "On the Tumuli and Inscribed Stones at New Grange, Dowth, and Knowth." *The Transactions of the Royal Irish Academy*. Vol. XXX, 1892, Pp. I-96 and VI plates.

that their explanation is to be sought in that direction."⁴ Regarding the carvings at Dowth Coffey believes that the purpose was the same;⁵ but he makes an exception for a leaf-like figure on one of the stones, and for a ship-figure elsewhere, objects that do not fit in with the rest of the figures judged as an ornamental design.⁶ It would seem that also J. Romilly Allen held a similar view concerning the sculptures at New Grange, but considered those at Dowth and Loughcrew to be of mixed character, ornamental and symbolic, for of these he says in his *Celtic Art*, p. 54: "The designs seem to be more symbolical than ornamental, and from the frequent occurrence of star-and-wheel-shaped designs may have to do with sun-worship." Commenting upon the stone sculpturing of the barrows Lord Avebury in his *Prehistoric Times* says: "with the exception of the fern-leaf all these archaic sculpturings in Great Britain are mere geometrical figures." This statement follows a brief account of those at New Grange and in County Meath. Speaking of cups, spirals, circles, and incomplete circles, among the carvings of England and Scotland he adds: "we have as yet no satisfactory clew to the meanings of these engravings."⁷ In view of the above quotation from Allen it is proper to add that Coffey had in 1892 noted some striking differences between the carvings at New Grange and those at Dowth and Loughcrew, principally the presence at Loughcrew of the cup-and-ring and at both Dowth and Loughcrew of the concentric circles as an isolated figure. These are lacking at New Grange. Coffey has dealt with the subject twice since 1892; the last time in his work entitled *New Grange and Other Incised*

⁴ L.c., p. 22. Similarly, p. 49.

⁵ L.c., p. 61. Coffey recognizes a certain difference between the carvings of Dowth and those of New Grange; in the former "Some of the more definite forms present analogies to the Loughcrew carvings, and may possibly represent particular objects as in the case of the rock-pictures at Santa Barbara, California." But he believes, as in the case of New Grange, the chief motive of the carvings is decorative, and that, though possibly some few may represent familiar objects, now unrecognizable, no symbolical or religious meaning is hidden in them.

⁶ Referring to cup and ring markings, p. 23, Coffey says: "I believe in the tumuli of the Boyne and Loughcrew, we hold a loose end of that tangled skein."

⁷ *Prehistoric Times. As Illustrated by Ancient Remains and the Manners and Customs of Savages.* By Lord Avebury. New York, 1913, pp. 172-173.

Tumuli in Ireland, 1912. On p. 19 he cites his opinion from 1892, quoted above. The author allows that "some of the figures were in their origin symbolical"; but at New Grange these figures also are used with "constructive meanings," that is, that the figures have no meaning or purpose of their own, but only in relation to other figures, I assume the meaning to be; that the figures in question are not used in isolation with symbolic significance, but as part of a complex with ornamental purpose. Of the figures at Dowth one of the stones in the outside circle of boundary stones is pictured, and its four circular figures are regarded as suns (p. 55). Again on p. 77 it is noted that some of the figures have a scribbled appearance, among which are noted certain "sun-signs." However, "The wheel and other figures are finely scored; they seem to have some reference to sun-marks. These circumstances make it doubtful to me whether all the chambers and markings were made at the same time, and we must not forget that annual festivals were held at Dowth, and that probably the chambers may have been entered at various times." It may be noted in this connection that according to the *Annals of Ulster* for 862 the tumulus at Dowth was entered and plundered by the Danes in that year; but possibly the survival of a tradition attached to the tumulus, and testified to by the religious festivals annually held there, may be of greater significance for our understanding some of the sculptured signs there than is the plundering, though it is within the range of possibility that the 'scribbled' signs may have been added then. Finally as to Loughcrew the sculptures are interpreted in the main as ornaments, but now with some reservations, as on p. 89: "Evidence of the solar cult is abundant at Loughcrew." As such are named the equilateral cross and the cup-and-circle.

Two subsequent contributions remain to be noted. In a study entitled "Une Nouvelle Interpretation des Gravures de New-Grange et de Gavrinis," published in *L'Anthropologie*, 1912, pp. 30-52, Joseph Dechelette would add the Irish carvings to a series of west European sculptures of Neolithic age which are interpreted as iconographic representations of the female human figure. The geographical distribution of figures thus interpreted, and first discussed in his *Manual d'Archéologie*, I, includes Asia Minor,

Greece, Italy, Sardinia, the Iberian Peninsula, France, Great Britain, and Scandinavia, to which is now, then, added Ireland. With reference to New Grange I quote: "En presence de cet ensemble de faits, je crois qu'on ne peut hesiter a faire entrer dans la même serie des masques humains schematiques certaines gravures de New-Grange reproduites—mais a mon avis, inexactement interpretées—dans un nouveau memoire de M. Coffey" (p. 35). As Dechellette confines himself to New Grange I shall not cite his argument, except to note that he included among the schematized representations of the human face certain figures that also occur at Loughcrew, as the rayed circle, which I shall be obliged to discuss, below, from an entirely different view-point. It is to be noted, however, that Dechellette accepts and insists upon a symbolic value for the figures, but that the original idea, the point of departure, is the female human figure, not zöomorphic deities or natural phenomena. Similar is the view of G. H. Luquet, *L'Anthropologie*, 1913, pp. 168-169. I finally note the fact that Dr. Eug. Stockis would seem to include certain groups of figures in Loughcrew and New Grange with those of Gavr'inis, Brittany, notably the concentric circles, for which he rejects all earlier explanations and offers an entirely new interpretation, namely that they are finger-print sculptures, representations in stone of the lines of the human hand and fingers, "Les Petroglyphes de Gavr'inis et leur Interpretation." *L'Anthropologie*, 1921, pp. I-36.

In all the above views the rock-carvings of Ireland separate themselves sharply, therefore, from the rock-tracings of the Scandinavian North, which scholars have in recent years come to regard as prevailing, or possibly entirely, of symbolic origin. And it also sets them apart from similar monuments in Scotland and England; for it is, no doubt, the general view of scholars to-day that also these are mainly, or perhaps wholly, of religious meaning.

Now there are undoubtedly very marked differences between the Irish and the Scandinavian material, entirely aside from the zöomorphic and anthropomorphic figures and the groups of ship figures, which characterize so markedly the rock-tracings of the North. But there are also a number of similar features, which can hardly have had entirely different purposes in the two cases.

I have before me the excellent drawings published by Mr. Frazer in the *Proceedings of the Society of Antiquaries of Scotland* for 1892-93. We have every confidence in the trustworthiness of these drawings, and in the care with which the details of the carvings have been reproduced.⁸ As I have examined these I have come to have a very definite feeling regarding those at Loughcrew that symbolic elements are present among their figures in considerable number, both as simple and as compound carvings. And that, therefore, these groups range themselves in this respect with the Scandinavian and the English-Scottish sculptures. An examination of especially the compound figures occurring among them leads me to the conviction that here, as in the North, we have the sun-symbol in certain characteristic primitive forms and in a considerable variety of developed forms.⁹ And that, therefore, these carvings in the cairns of central Ireland offer unmistakable evidence of a well-developed sun-cult as the central element in the religious worship of the time. I believe this can be shown. It is the purpose of this study to consider briefly those at Loughcrew from this point of view.

I shall quote first Wm. Frazer's description of the general situation of the cairns: "To the northwest of County Meath, about two miles distant from the town of Oldcastle, on the estate of Mr. Napper, Loughcrew, are a small range of hills, extending about two miles east and west, of which the highest ridge, called Carne Bane or Sliabh-Na-Calliaghe, rises 904 feet above sea-level, the surrounding country averaging about 300 feet. Being the highest eminence in Meath it affords an extensive prospect over widespread limestone plains stretching south and west across the center of Ireland, and the lower Silurian grits and slaty rocks that extend northwards round Lough Ramor, the ridge constituting the line of junction of these two systems of rock. On a clear

⁸ See also Frazer's account of them, *I.c.*, pp. 296-297.

⁹ In a monograph entitled: "South Scandinavian Rock-Tracings. A Survey of the Material, with Four Plates and a Bibliography, and Brief Account of Similar Sculptures in England and Scotland. With Two Plates"; published as Vol. VII, number I, of *Scandinavian Studies and Notes*, 1921, I have, on plates 3 and 4, indicated something of this variety in the rock-tracings. Confining myself there mainly to those connected with the cup and the wheel the two plates show more than 200 varieties.

day the ranges of mountains above Carlingford on the east coast and near Sligo in the far west become visible from its summit, and it is stated that no less than eighteen out of the thirty-two counties of Ireland may be pointed out around the horizon."¹⁰ This situation of this vast burial ground on the highest spot in the region (as near to the sun as possible), is paralleled in many other places in Great Britain and elsewhere by the situation of graves and holy places with undoubted evidences of sun-worship. It would be quite contrary to what we should expect if the numerous sculpturings here found should convey no message of such a worship in one form or another.

There are at Loughcrew twenty-five cairns, of which ten now contain sculptured stones; of the remainder, one, Cairn *D*, seems never to have had any. Outside Cairn *N* there were four large stones, which mark an avenue sixteen yards long, pointing east; one of these stones had forty-eight cup-hollows inscribed on it. Further a stone connected with Cairn *O* showed twenty-eight cups. The stones of the remaining twelve cairns have been partly or wholly removed, so that it cannot be said whether they contained figured stones or not. Of those cairns that remain more or less intact, and which contain the figured stones, the roofing flags are often removed. In a few cases remaining roof-stones (stone *s* of cairn *L*, and stone *o*, *o*, of cairn *T*), contain inscribed figures; but the great majority of the carvings are found on stones of the walls, the passages, or the entrances, of the cairns. There are exactly 100 such inscribed stones within the graves; further one stone with "depressed markings" lies in a near-by field, and another large stone, which stands in the open "thirteen feet from the circumference of the most perfect or northern circle," contains an elaborately carved wheel, partly surrounded by six smaller wheels. The cairns with incisings are designated *F*, *H*, *I*, *J*, *L*, *S*, *T*, *U*, *V*, *W*, while the stone near the northern circle is pictured as *Fig. 76* in Frazer's illustrations. The several stones are lettered, *a*, *b*, *c*, etc., for each cairn. I shall refer to them in the same way.

There are, as I estimate the number, fully 800 figures. The largest cairn, *L*, is forty-five yards across; this contains eighteen

¹⁰ *L.c.*, p. 294.

incised stones. The next largest cairn, *T*, is $38\frac{1}{2}$ yards in diameter; this has twenty-eight incised stones, which is the largest number in any one cairn. This cairn, *T*, is enclosed "in a circle of thirty-seven stones laid on edge, varying in length from six to twelve feet." Inside the retaining-wall, "apparently going round the entire base of this cairn, is a piled-up layer, rising from three to four feet in height and about two feet in thickness, of sparkling quartz, a rock, which, unless obtained from glacial boulders by the builders of the cairn, must have been brought from some locality upwards of fifty miles distant."¹¹ This feature is not without interest. The most elaborate configurations are those of Cairn *T*.

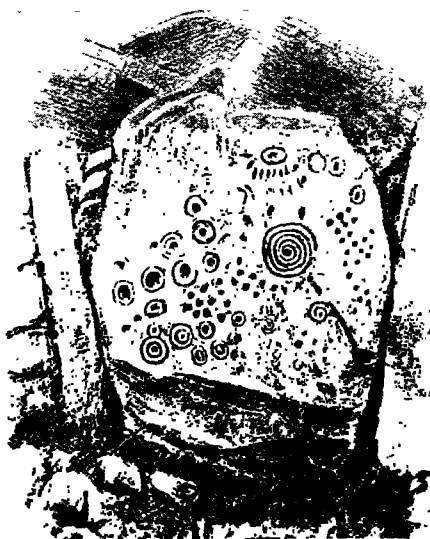
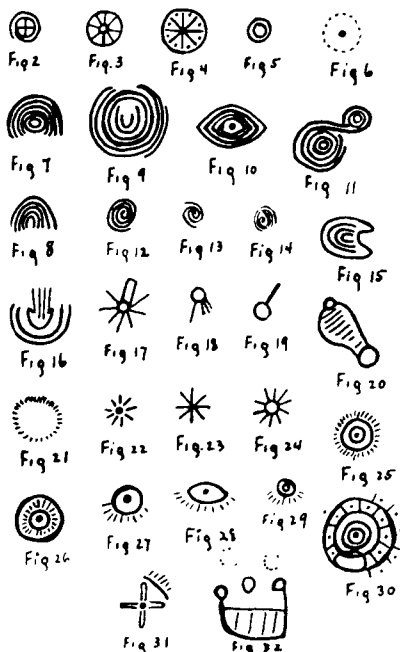


Fig. 1.—Stone d, Cairn *T*.

Many stones have but one or two figures, while several have fifty or more. The following facts are also to be noted: in the case of stones with few figures these are found scattered irregularly about the surface of the stone. There is not evidenced any effort at a definite arrangement. This is also nearly always the case with the surfaces containing a mass of incisions; the figures are irregularly placed, as if each were there for its own sake, without any

¹¹ L.c., p. 320.

reference to ensemble effect. In a measure some stones in the *U* and *V* groups form an exception to this; but only in a measure. If stones *gU*, *hU*, *jU*, *cV*, and *cW*, are to be judged as conscious efforts at artistic effect they must be pronounced crude indeed.¹² They are found, as on *jU*, by the side of the same figures that characterize the stones in the cairns at Loughcrew as a whole. In turning to the figures themselves I shall begin with a small group of variant forms of the sun-wheel, forms which we identify with similar ones in Scandinavian rock-tracings and other rock-sculpturings on the continent.

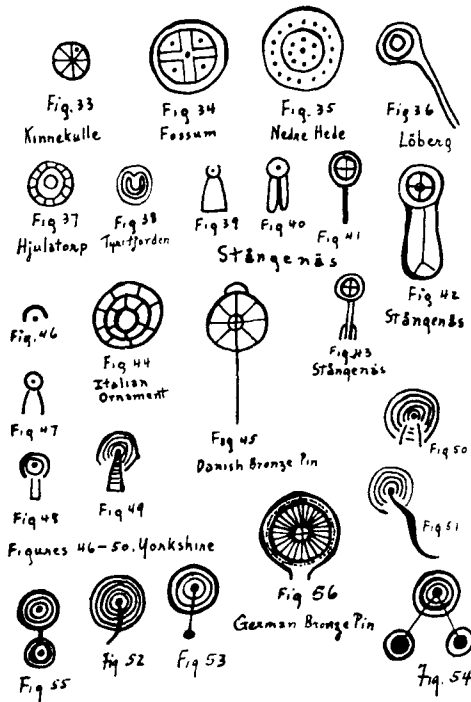


Figs. 2-32.—Figures from the stone-carvings at Loughcrew.

The Wheel of Four Spokes. There is one example of this, namely on stone *d*, cairn *S*, where it appears enclosed as here *Fig. 2*. The enclosing spiral, in place of a circle as in Scandinavian tracings, is in keeping with a tendency observable elsewhere also

¹² Judged from the accomplishments of the time in other parts of Western Europe.

in the Loughcrew figures. See below. As is well known the four-spoked wheel within a circle (the so-called "cross-wheel") is found a number of times among Northern tracings, as on the *Krapperup Stone*,¹³ Skåne, Sweden. It is elsewhere in Norwegian and Swedish tracings found in isolation and in a number of compound forms. I shall mention only that of *Norra Trätäl-landa*,¹⁴ Tanum, Bohuslän, Sweden, where it is placed between two anthropomorphic figures representing, it is not unlikely, a major and a minor deity.



Figs. 33-56.—Figures from British and Scandinavian sculptures and Danish, German, and Italian bronze ornaments.

¹³ Shown p. 430 of Vol. for 1875 of *Aarbøger for nordisk Oldkyndighed*, Copenhagen, or p. 201 of Vol. X, of *Svenska Fornminnesforeningens Tidskrift*.

¹⁴ Shown in *Göteborgs och Bohusläns Fornminnen*, Vol. VII I, p. 558, in a study of "Tanums Hårads Hällristningar" by Oscar Almgren of Upsala University.

The Wheel of Eight Spokes. There are three examples of this: stones *eU*, *hL*, and *zT*. The first two are here shown as *Figs. 3-4*. The sun-wheel with a central ring appears as a separate figure several times on Scandinavian rock-tracings, as on the *Kasen Stone*, at Ryk, Tanum, Sweden, here combined with spirals, ships, humans with upraised hands, etc.¹⁵ The commoner form of four spokes and central ring appears four times on the same rock. In the example on stone *hL* the spoke-lines do not all meet the enclosing circle, and may not be intended to do so, in which case the figure is to be grouped with others to be spoken of below.

The Wheel Without Spokes. This is found a number of times at Loughcrew, especially in cairns *L* and *T*. It is seen as a single ring with no other figure on the edge of one stone in *L*, but it is generally found associated with the cup, the wheel, the spiral, etc., as on *mL* and *dT*. The simple wheel of one circle is found about twenty-five times at Loughcrew. Usually, however, it takes the form of a series of concentric rings; it may then be of two rings (*hI*, *bL*, *mL*, *jU*). On stone *hI* the outer ring is made up of a succession of dots and very short lines, here *Fig. 6*. See below under Cups. At Loughcrew concentric rings of few rings are not often seen (however, one of three rings, *cL*, one of four, *jU*). The characteristic thing here is the large figure of six or ten or twelve concentric rings. Thus the complexes of the chamber of cairn *L* show a mass of such figures with a large one of nine concentric circles around a central cup, forming the middle of the whole complex. And for the most part the large figure of concentric rings is not cut complete; ordinarily what we have is the upper or the lower half, though the figure may also be placed on the side, as it were. On the *Hag's Chair* the open side is down, similarly one of twelve concentric curved lines on *o*, *o*, *T*. The symbol takes this form especially often on the stones of cairn *T*, where we even find them combined into a figure of three such sections of large groups of curved lines. The sections of concentric circles no doubt symbolize the radiant sun, whereas the body of concentric circles is of more general meaning, i.e. without emphasis upon the sun's radiance.

¹⁵ Almgren, l.c., p. 550. At *Hvitlycke* it forms the body of anthropomorphic figures.

The Spiral. In the sculpturings at Loughcrew figures are often seen in which a circle complex passes into a spiral or vice versa. The pure spiral as a separate figure does occur, as one of four turns on stone *gI* and the large one of six turns on stone *dT* (here *Fig. 1*). Others are seen on stones *lL* and *hU*, and an especially fine one on stone *aII*. On this same stone are seen two large spiral figures at the left, cut around a central cupped ring. It is to be noted that in these cases the initial stroke of the spiral does not proceed from the ring but the spiral is wholly detached from it. On the other hand on the Hag's Chair, Cairn *T*, a spiral is changed at the second turn into a ring and enclosed in a ring; again on *bU* a small ring is enclosed in a single spiral. On stone *fI* two groups of concentric rings are by means of spiral lines joined into a figure, shown here as *Fig. 11*. *Figures 13 and 14* represent spiral forms occurring on stones *gI* and *iL*. Finally the large top figure seen on *Fig. 31* of Frazer's illustrations represents a still more elaborate ring-and-spiral combination.

Flexed and Open Concentric Rings. These forms of the sun-wheel symbol, so characteristic of English-Scottish sculpturings¹⁶ and several times met with in the rock-tracings of Norway, are also seen at Loughcrew. Cf. also above, under sectional concentric rings, or concentric curves. Two or more rings are left open and flexed outward, or not flexed and then perhaps enclosed in a circle. These simplest forms occur once each, *fU* and *iL*; the latter exhibits a figure of six concentric rings, the central two being open, the outer two open at the left, but otherwise seen in the drawing as here *Fig. 9*. Of the various developments of this figure on English, Scottish, and Swedish, carvings two are found among those at Loughcrew, shown here as *Figs. 15 and 16*; they appear on stones in Cairn *T*. The former belongs to a type of the sun-disk symbol, an example of which occurs on the *Tyrifjorden Stone*,¹⁷ Smaalenene, Norway, in the form here shown as *Fig. 38*. Cf. also above *Fig. 9*. The second of these figures represents one form of an extensive class with cupped ring, or concentric rings,

¹⁶ As at Ilkley, Yorkshire, England, and at Auchnabreach, Argyleshire, Scotland.

¹⁷ The part of this stone containing this figure is pictured in *Aarsberetning for 1902* of *Foreningen til norske Fortidsmindesmaerkers Bevaring*, p. 125.

and grooves running from the center to or beyond the enclosing circle. In its English form there is a central cup and usually a number of concentric rings. See *Figures 47-51*. Scottish forms are seen in *Figures 52-54*. The Scandinavian examples ordinarily have a cupped ring or a "cross-wheel." There may be one or several grooves, and even in the British figures these most often extend considerably beyond the circle. And in cases of a pair of grooves the sections of the concentric circles are seen between these and perhaps continuing between the grooves also outside the outer circle. It is the so-called "mirror emblem" and the "ladder ornament." Some of the Swedish forms are shown here as *Figures 39-43*; a Norwegian example from the *Løberg* group, Gjerpen, is given as *Fig. 36*. In the North the principal development is in Bohuslän, Sweden, especially the District of Stångenäs and a part of Tanum, where they are also present in connection with anthropomorphic representations of the sun-deity. An example of such a "mirror" from County Kerry, Ireland, is here given as *Fig. 55*.¹⁸ Of the Loughcrew figures that here given as *Fig. 19* is found on stone *bU*, and that of *Fig. 18* on stone *dS*. On the Irish figures, as also sometimes on English-Scottish examples, the grooves, or handles, or arch, run only to the (outer) circle. Cf., therefore, *Fig. 17*, from stone *aI*. An unusual form is seen in *Fig. 20*, from stone *cU*.

Cupped Rings. Every cairn at Loughcrew exhibits cup-and-ring markings in one form or another. The general appearance of the "cup-and-ring" symbol among Norwegian-Swedish and English-Scottish Bronze Age sculpturings is well known. It is found in its simplest form, a cup within a ring, three times on the third *Tuna Stone*,¹⁹ Sörmland, Sweden; it is seen in many complex wheel-forms in the Gjerpen groups,²⁰ Norway, in zoomorphic and

¹⁸ Given as *Fig. 11* on the illustrative plates accompanying a study by Charles Rau entitled "Observations on Cup-shaped and Other Lapidarian Sculpture in the Old World and in America," as *Contributions to American Ethnology*, Vol. V. pp. 1-112. Washington, D. C. 1882.

¹⁹ An illustration of this interesting stone is given by Oscar Montelius in an article entitled "Ett Märkligt Fynd från Södermanland," published in Vol. X of *Svenska Fornminnesförningens Tidskrift*, pp. 189-204.

²⁰ These were published by C. L. Coll in the *Aarsberetning for 1901*. See note 17 above.

anthropomorphic figures in Smaalenene, Norway, and Bohuslän, Sweden, and now and then elsewhere. In England the Ilkley sculptures,²¹ Yorkshire, show a great variety of forms, as in Scotland, those of Argyleshire, and elsewhere. In Ireland they are found among the carvings of County Kerry, and also among those at Dowth. They are, however, not present in the sculptures of New Grange as William Frazer showed;²² this is one of several features that distinguished the latter from the figure groups at Loughcrew, and also from those at Dowth. Thirty-six of the eighty incised stones at Loughcrew exhibit cup-and-ring markings. Various forms are shown here as *Figures 10, 26, and 30*. Cf. also *Figures 6, 25, 27, and 28*. Stone *eL* seems to contain three very small cupped rings on a surface with eighty cup-depressions. No other type of figure appears.

The usual thing is a cup and a single ring; sometimes the ring is replaced by a spiral. A cup in a number of concentric rings occurs several times. On stone *dT* and *bV* the central cup is very large, as often on Swedish tracings. The concentric rings are sometimes flattened out into an oval, even into pointed ends, as in *Fig. 10*, stone *wT*; otherwise this flattening appears intentional in only two other cases, *kT* and *cU*. Elsewhere tendencies toward this shape in many of the larger ring-and-spiral figures seem to be due merely to lack of skill, the inability to cut a true circle. The most elaborate combination of cup-and-rings at Loughcrew is one, here shown as *Fig. 30*, which appears on stone *xT* in a large complex of, mainly, cupped rings. Similar cupping of the spaces between the spokes is seen on Norwegian figures,²³ as those at Fossum, Gjerpen, one of which is reproduced here as *Fig. 34*. A great variety of cup-, wheel-, and circle-figures occur among the rock-tracings of Smaalenene, Norway, and the districts of Kville,²⁴ Tanum, and Stångenäs, in the Province of Bohuslän, Sweden. *Fig. 35*, shows one such from Nedre Hede, Kville. In

²¹ *Illustrated Archaeologist*, Vol. II, 1896, pp. 65-83, article by J. Romilly Allen on "The Cup- and -Ring Sculptures of Ilkley."

²² *L. c.*, p. 22.

²³ From *Larsberetning* for 1901, p. 51. See note 17.

²⁴ Illustrations of these were first published by Emil Ekhoft in *Göteborgs och Bohusläns Fornminnen*, Vol. II, 1879-83, pp. 150-162.

the *Kinneulle* groups, Västergötland, Sweden, one is seen of the type here given as *Fig. 33*. On some exceedingly interesting groups of figures incised on rocks at *Hjulatorp*, Småland, Sweden, discovered a few years ago,²⁵ occurs one with a central ring in place of the cup. See *Fig. 37*. As the Loughcrew figure of this presents a special feature I shall consider it in another connection below.

Ring or Wheel Formed With Cups. This form of the sun-wheel is characteristic of some groups among Scandinavian rock-tracings and they are now and then met with elsewhere. At *Kinneulle* there is a ring formed with seven cup-depressions around a central cup, and also one of nine enclosing cups around a larger cup. The *Hjulatorp Rock*, Småland, shows a ring of cups without any central depression, and the figure appears many times in Bohuslän. At Loughcrew a ring of five cups about a center of one cup is seen on stone *γL*, and on stone *dT* one of six cups; see here *Fig. 1*. Not quite round, but possibly intended for such a figure, are two groups of cups on stone *bT*. Cupped rings in pairs (or wheels in pairs) are sometimes observed in Scandinavia and Scotland, and then in several forms: as a chariot, the so-called "spectacle-ornament," and in some form of a tree, leaf or flower-complex. The *Doo Cave* of East Wemyss, Fifeshire, Scotland, contains a remarkable example of the last.²⁶ No clear instance of any of the three types of paired cup-and-ring figure is found among the Loughcrew groups, but pairs of other forms occur, as the two radiant rings on stone *cI*, and on stone *αT*, here shown as *Fig. 23*. The latter stone shows also two cup-and-ring groups combined above by a curved line over two cups. In this connecting element we have a form of the cup-and-ring symbol which is also present elsewhere in the Loughcrew carvings, as two cups in a ring or an oval. One such occurs immediately above the sun-wheel on stone *aS*, and one on stone *eH*. It is not clear what special conception may have attached to this as opposed to the single-cupped ring.

We have considered so far certain well-recognized sun-symbols

²⁵ Published in *Fornvännen*, 1909, pp. 187-194.

²⁶ *Illustrated Archaeologist*, Vol. XI, p. 257, in one of a series of three articles on "The Sculptures Caves of East Wemyss," Vols. XI-XII, by John Patrick.

and some special forms of these that occur on the carved stones of Loughcrew cairns. To these I add here one example of a different type of sun-symbol, which appears on stone *cU*, namely the ship. Its form is reproduced here as *Fig. 32*, and the whole figure complex in *American Anthropologist* for 1923, p. 389. Other figures of somewhat similar shape occur, but are rather uncertain; there can, however, be no doubt of this particular one. By way of comparison I may refer to a similar sun-ship among those of the Begby tracings in Smaalenene, Norway.²⁷ There are many examples of ring, or wheel, or spiral, in bow or stern of ships on the rock-tracings, as well as of wheels or circles cut immediately above a ship.

Unusual Forms of the Sun-Wheel. On stone *aT* there are two circles, joined one above the other, made by short slender transverse lines; see *Fig. 21*. One of the circles has a central cup. Stone *hT* shows a cup with a spiral around it, and also a cupped ring enclosed in a squarish figure. Stone *bT* shows a square figure, three of the ends exhibiting cup-hollows. Cf. the swastika; also may be compared the various ball-like stones with four or six round or flattish-round projections, such as that found in a grave at Ardkeiling, Strypes, Elginshire, Scotland, pictured in *The Illustrated Archaeologist*, III, p. 45, showing four projecting knobs with grooves between; or that found at East Braikie, Forfarshire, Scotland.²⁸ A flower-like figure of three parts is seen on stone *bI* and a triangular figure of three rings on stone *fU*; with this compare such a triskele ball of three projecting knobs as that from Towie, Aberdeenshire, p. 26, Vol. XXX, *Transactions of the Royal Irish Academy*. A figure of possibly a foot-sole, as often in Scandinavian sculptures and elsewhere, is seen a few times.

The Rose-Figure. Among the elaborately carved stones of cairn *T* is one, stone *o*, the surface of which is occupied by a number of rose-figures, grouped irregularly around two cupped

²⁷ *Aarsberetning*, 1902, 119. In *Fig. 32*, here, the right side is drawn a little too high.

²⁸ The number of faces varies from three to fifteen; sometimes the faces are engraved. See Sir John Evans, *Ancient Stone Implements of Great Britain*, 1872, p. 376, *Illustrated Archaeologist*, III, p. 105, *Transactions of the Royal Irish Academy*, XXX, p. 26, and *Archaeologia*, LII, Part I, p. 14, but especially *Proceedings of the Society of Antiquaries of Scotland*, 1876. The Towie ball is also pictured here.

rings.²⁹ Four of the figures are enclosed in circles; while on stone *dL* is seen a similar figure without the circle, but placed opposite the open part of a section of some fourteen concentric rings, completing the latter, as it were. Finally on stone *jU* several ring groups are formed into a rose. It is clear that the rose has a direct connection with the wheel, and that the rose itself is a sun-symbol. What is this connection and how did the rose-figure arise? The roseated figure with floriated disk is found a number of times on Scandinavian rock-tracings, and is there possibly in a measure of a different origin from that of the Loughcrew carvings. In the latter it seems to me the rose-figure is directly evolved out of the four-spoked and the eight-spoked wheel, more especially it would seem the latter. The doubling of the lines for spokes is often seen, as on the *Fossum Slab*, Gjerpen, Norway, where several of this type are present on the same surface. By eliminating the part of the circle between the double-stroked spokes we have the figure in question, as once on stone *o, o, T*. On stone *oT* (see above) the figure is found three times enclosed in a circle. Cf. *Fig. 31* from stone *aS*. It is to be noted that the omission of the circle is a characteristic of the Loughcrew carvings. On stone *xT* we have a figure of four spokes with a cup between each; the outer ring is omitted. On stones *aI* and *eI* several such figures occur; one of four spokes made with double lines, without circle, but open ends, and another with closed ends. In Norwegian tracings the same figure is seen, but with the circle retained.

The Symbol of the Radiant Sun. Of the considerable number of figures that belong here see again *Fig. 30*, already referred to above under cup-and-ring combinations. This wheel does not exhibit the central spoke ordinarily seen on Scandinavian rock-tracings, but cupped strokes between the two outer circles, and other strokes outside the circle, some of which have been effaced by weathering. Several of them are seen, however, as also the cup-hollows between them. Here we have another significant evidence of sun-worship on the part of those who made the

²⁹ This stone has often been pictured, as in "*Observations on Cup-shaped and Other Lapidarian Sculpture in the Old World and in America*. Charles Rau. Washington, D. C. 1881, *Fig. 12*; *Svenska fornminnesföreningens tidskrift*, X, *Fig. 13*, p. 203; George Coffey: *New Grange and Other Incised Tumuli in Ireland*, 1912, p. 88

Loughcrew sculptures. The figure belongs to a special type of representations of the sun-wheel, in which the incised bars or slender lines are not intended to stand for the spokes of the sun-wheel, but represent the rays of the sun itself. In figures of this class in Scandinavian tracings the emphasis is everywhere on the sun as a revolving wheel, or disk, or sphere, and where the spokes are shown they run outward from a central cup or ring. In some cases with several enclosing rings the spokes may run through to one or more of these. Or again four other spokes may run from the center to one of the outer circles, thus producing a figure of an eight-spoked wheel inside one of four spokes. In the tomb-carvings of Loughcrew the wheel plays an important rôle, as we have seen; but the emphasis is here not on the sun as a revolving constellation, but on the sun as a radiant sphere. And so its symbol becomes a ball, or a ring, and radiating lines. In *Fig. 30*, we have three concentric circles around a central cup, and cups and rays around the circumference of the outer circle, the whole figure being again enclosed in a ring, with radiating lines. It is important to note that the latter cannot be looked upon as part of the interior bars, viewed as spokes, for they are not cut as continuations of these, but proceed from points between the interior bars. The Loughcrew figure belongs with a group of wheel-symbols in which the center is a large ring, or two or more or concentric rings (with or without cup), and which is connected with an outer ring by radiating lines; the center of the figure may also be a wheel of (generally) four spokes, or more. The number of exterior lines representing the rays, is larger than that of the interior spokes; hence some of the exterior lines, or it may be all of them, occupy a position between the ends of the interior lines, not as continuations of them,—that is, they are not parts of the spokes; they are added strokes representing the rays of the sun. *Fig. 45* of the head of a Danish bronze pin shows four rays between continuations of the four central spokes. *Fig. 44*, an Italian ornament, shows six rays between the inner circles and eight rays between the outer circles; in *Fig. 56* we have a mass of rays about a central wheel.³⁰

³⁰ Copied here from *Zeitschrift für Ethnologie* for 1904, p. 590.

Other Forms of the Symbol of the Radiant Sun. We have seen above that the sculpturings at Loughcrew exhibit in their symbolism an emphasis upon the rays of the sun, not so much on its movement or its roundness. This finds expression in a development of the circle or the cup-and-ring into forms with prominent radial lines for the sun's rays. There is first a very striking one where the sun is represented by a cup-depression with a number of rays projecting out from it, as *Fig. 22*, from stone *cU*. A similar one appears on stone *jU*. Or the center is a small ring, as here *Fig. 24*, from stone *o, oT*. Stone *dV* has, as the only figure, such a one, with the rays represented by short lines and dots (very small cups). In several instances there is no central cup or ring, as here *Fig. 23*. This figure corresponds to the simplest ones of the wheel, see *Fig. 33*, but with elimination of the circle. Of

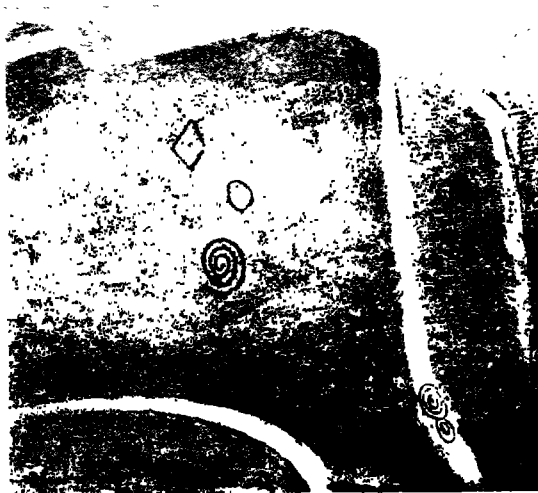


Fig. 57.—Stone *I*, Cairn *L*.

these various forms there are twelve examples; *Fig. 26* shows one with many fine rays which do not touch either interior or exterior circle. The symbol here considered may also assume other forms. With the rays as the principal element a section of above forms is sufficient, always with prominent rays. On stone *aS* a cupped curved line (i.e. an incomplete cupped ring) appears with several

short lines opposite the open part of the ring. See above p. 11 and *Fig. 46*. Ordinarily the figure takes one of the forms here shown as *Figs. 27-29*. In a few cases the rays are above, but in most occurrences of the symbol the rays are beneath. The former would seem to represent the setting sun (and the rising sun). See herewith *Fig. 57* of Stone *l*, Cairn *L*. The figure with the rays beneath shows sometimes heavy rays, numerous slanting rays, as on the upright stone in the open, where are seen two series of heavily cut rays forming an outer and an inner semi-circle, and between the rays and beneath the lower series other curved rows



Fig. 58.—Stone, near the northern circle.

of cup-depressions, one cup for each ray.³¹ If the figure with superior rays symbolizes the declining sun at the end of day, that now considered would seem to symbolize the sun, as in the full strength of day, it sends its warming rays down on earth. See herewith *Fig. 58*. Modifications of the symbol with radial lines in which the vertical and slanting short lines are replaced by two or three short curved lines above the ring, and running con-

³¹ This stone is pictured and briefly discussed by George Coffey, *New Grange*, etc., p. 90. He notes that the solar disc with rays proceeding downwards is a well-known Egyptian sign for solar energy, and suggests this meaning for the markings on the stone in question, adding: "At the same time it is difficult to escape from the impression that some scheme of association underlies the markings on some of the stones at Loughcrew, pertaining to religious myth or the life-stories of the persons who were buried there." Egyptian influence for the symbol here discussed need, of course, not be assumed.

centrically with it, may occur; one such is found as the only figure on stone *f* of Cairn *S*. Compare the figure of two groups of concentric lines over a figure of curved lines spoken of above.

Conclusion. The two conceptions of the sun which seem evidenced in the Loughcrew symbols, the one as a light- and heat-giving power, the other as declining at the end of day and disappearing beneath the horizon followed by darkness, represent undoubtedly the points of departure of the belief in the twofold character of the sun. It will help to explain the dual cult, one to a god of fruitfulness and another to a death deity, of which Bronze Age rock-tracings and other sculpturings among Indo-European peoples seem well-nigh everywhere to give evidence. The Scandinavian rock-tracings seem certainly to reveal a sun-worship in a well-developed stage, with various cults, a nature worship with zöomorphic deities; and here and there we seem to witness the emergence of anthropomorphic gods. Of this the Loughcrew groups may represent the beginnings. The sun symbol with descending rays represents the sun in the function of bestowing fruitfulness and life. The symbol with cupped circles and descending grooves in Scotland and England then may be an emblem of fertility in nature and in human life. At any rate it seems likely that sun-worship as evidenced at Loughcrew had a fertility cult as part of it. I note the fact that the form of the compound symbol of the radiant sun varies somewhat in the two types of cases. Where we have a figure with surrounding rays the center may be a cup, a ring, or a cupped ring; and in the figure with superior rays the center is a ring or concentric rings. On the other hand in ten of the twelve occurrences of the figure with descending rays the center is a cupped ring. Possibly then this cupped ring with descending rays is a symbol of the sun as a deity of fruitfulness. We may compare the symbol of Mahadeo (Siva), fertility deity of the Hindoos: a cupped double ring, or cupped concentric rings with a groove running from the center through the rings.

And finally regarding the significance of the cup-hollows I call attention again to the fact that at Loughcrew the cup often replaces the ring in the simplest figures. The cup stands for

that which the ring stands for. The cup alone then is a sun-symbol. And so originally elsewhere perhaps.³² The cup or bowl antedates the wheel or the circle (and all other symbols) in the late Stone Age. Here as later it is regularly hemispherical in shape. No doubt our ancestors in the late Stone Age first conceived of the sun as a ball; and the half-sphere carvings in stone that they left were the earliest way in which they reproduced its likeness for their purpose.

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³² See, upon the cup, more fully my article in *American Anthropologist*, 1922, especially pp. 445-447.

GEOGRAPHICAL STUDIES AMONG BABYLONIANS AND EGYPTIANS

By H. F. LUTZ

THE extent of the geographical knowledge of the ancient Near Eastern peoples, and particularly that of the Babylonians and the Egyptians, has sometimes been exaggerated by writers, who have attributed to these peoples elements of knowledge which a closer inspection must deny them. Thus, for instance, C. Chiarini¹ attributed to the Babylonians a knowledge of the heliocentric system; H. Martin,² while denying to the Babylonians a knowledge of the globular form of the earth, ascribed it to the Egyptians; and Chabas³ tried to prove that the Egyptians knew of the movement of the earth. Others have been more careful in their ascription or denial to the ancient Orientals of a theoretical knowledge of geography, and have concentrated their attention accordingly more upon the practical, though not less important, task of identifying the numerous place-names which the existing monuments contain and which are being discovered in ever increasing number. These latter researches have been exceedingly fruitful, and promise a rather intimate knowledge of the exact location of villages, forts, trading-centers, towns, cities, districts, and countries. But eminently useful as such study is, it can not lead to a reconstruction of the map of countries or of the earth as conceived by the Babylonians or the Egyptians. For the simple purposes of history, of course, it is sufficient to determine exact geographical locations, but science will not be content with these practical aims; it must try to gain an insight into the general geographical views held by these peoples,—to derive from the results gained from local identifications a knowledge of the general geographical outlook of the Babylonians and the Egyptians. Though the existing data may

¹ C. Chiarini, *Fragment d'astronomie Chaldéenne* etc. Leipzig 1831.

² Examen d'un mémoire posthume de Mr. Letronne, in *Revue archéologique* Tom. VI, 1, 1854, p. 26 and 51.

³ *Zeitschrift für ägyptische Sprache und Altertumskunde*, Dec. 1864.

still be too meagre to attempt such a task with much promise of success, the ultimate goal must nevertheless constantly be kept in view.

As early as the time of Sargon of Agade more or less minute geographical studies had been undertaken in Babylonia. One textbook of that age is preserved in an Assyrian copy,⁴ made probably in the reign of Sargon, king of Assyria. It contains notations concerning roads, naming the country which they traverse between two given points, as for instance (line 22), "from Tirgan of Gutium unto Usar-ilulu of the land of Edamarus," (line 23) "from Usar-ilulu unto Bit-Sinna of the land of Marî," (line 24) "from Bit-Sinna unto Mashganpalki of the land of Malgi." It contains also statements concerning the distances within certain countries, given in the following manner: (line 33) "Forty *bêri*⁵ (long) is the mainroad of Markhashi"; (lines 38 ff.) "Hundred-twenty *bêri* (long) is the mainroad of the country of Ru(?)si from Labnanu unto Turukkî; ninety *bêri* (long) is the mainroad of the land of Lullubi." Geographical lists have been found divided into columns; in those with two columns the left contains the names of cities and the right on the corresponding line the names of the countries or districts in which they were situated;⁶ four-columned lists contain the Sumerian name, the ideographic sign, the Akkadian pronunciation, and an additional name of the same town or city.⁷

Itineraries, such as one which names the stations on a journey into the trans-Tigris districts,⁸ or another which enumerates the cities between Ashur and the Persian Gulf,⁹ must have been quite common. Road maps, drawn up with more or less accuracy were probably in use; but even if such maps are found, it will be

⁴ Otto Schröder, *Keilschrifttexte aus Assur verschiedenen Inhalts*, Leipzig, 1920, No. 92.

⁵ I.e., two-hundred and forty kilometers.

⁶ Otto Schröder, *o.c.*, no. 80.

⁷ Otto Schröder, *o.c.*, no. 183.

⁸ C. H. W. Johns, *Assyrian Deeds and Documents*, No. 1096, compare *Mitteil. der Vorderasiat. Gesellschaft*, vi, 134 ff.

⁹ V. R. 12, no. 6 and II R. 52, no. 2; compare *Zeitschrift für Assyriologie*, Vol. XV 238 ff.

difficult to ascertain with any degree of certainty by what principle the map-drawer was guided; as was the case with the road-maps in the Roman Empire, e.g., the "Itinerarium Antonini," which seems to have been drawn up in the time of Caracalla, emphasis was probably laid merely on the correct distance between the more important places. From the time of the Kassite rule in Babylonia there exists a map which shows the canals and villages in the neighborhood of Nippur.¹⁰ What seems to be a copy of an Old-Babylonian original has come to light in recent years in a fragment of a city-plan from Ashur,¹¹ part of the sixth tablet of a series of topographical maps drawn probably for military purposes. Another tablet¹² shows the topography of Babylon; this also appears to be a part of a larger series. Still another tablet¹³ concerns itself exclusively with the topography of the great Marduk-temple E-sag-ila in Babylon.

From the date-formula of the eighth year of Samsu-iluna, the successor of Hammurapi we learn that he probably introduced into the temple a map worked in copper or bronze which represented mountains and rivers.¹⁴ This work was important enough to be commemorated in the date-formula, and it recalls to us the fact that also Aristagoras c.500 B.C. was in possession of "a bronze tablet upon which the whole earth, all of the ocean and all the rivers were engraved," which he showed to the Spartan king Cleomenes. It may have been customary to fashion the more elaborate specimens of maps upon metal, and such a custom may have at first been adopted by the Greeks from the Babylonians. The date-formula of the thirteenth year of Hammurapi probably likewise has reference to such a bronze map.¹⁵ These

¹⁰ St. Langdon, An ancient Babylonian map in the Museum Journal (University of Pennsylvania), 7, 4, 1916, pp. 263-268.

¹¹ Otto Schröder, Keilschrifttexte aus Assur verschiedenen Inhalts, No. 25.

¹² Cuneiform Texts (British Museum) xxii, plate 49; the text is probably part of a larger text to which belongs also museum specimen VATH 554 (Berlin).

¹³ See F. Hommel, *Grundriss*, pp. 315-319, and Dambart, Th., *Der Sakralturm*, München, 1920.

¹⁴ The date-formula reads: "The year in which Samsu-iluna, the king (made) a royal bronze map (*manzâzu*) (which) (presents) mountains and rivers carrying exuberance and abundance."

¹⁵ =urudu ki-lugal-gub-ba

maps may have been croquis-like plans without any projection.¹⁶ These examples show that the Babylonians did not lack an interest in geographical investigation and this interest, one would suppose, must have been stimulated by the growing commercial and cultural intercourse of the various peoples with whom they had come into contact.

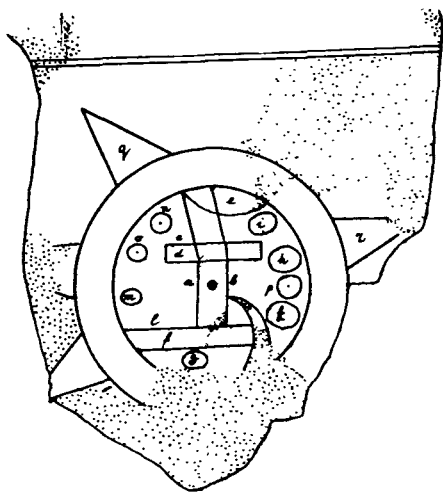


Fig. 1.—Babylonian map of the world.

As an evidence of a wider interest we possess also a Babylonian tablet dating from Neo-Babylonian times, but copied from an older tablet, which contains, besides the text, a map of the world. The text, which is preserved in fragmentary form, apparently gives an account of Sargon I's campaign into Asia Minor and the strange events which occurred during the campaign. The reverse of the tablet refers to districts outside of Babylonia. The map itself contains a circle, representing the *nâr marratu*, "the salt-river"¹⁷ that is, the Persian Gulf. The "world" which the salt river encircles is Babylonia and Assyria. The center, although

¹⁶ Compare here the celebrated tripods of the Chinese, "said to have been cast by the Emperor Yü, upon which maps and records of the nine divisions of his empire were engraved." See Fr. Hirth, *The Ancient History of China*, p. 221. I owe this reference to my pupil, Mr. Peter Boodberg.

¹⁷ Or "the ring-river"; CT XVIII, pl. 1, 22 *marratum* = *unqu*; the rainbow is also called *marratu*, for it was considered to be the fragment of a ring.

the black dot which indicates it is not accompanied by any name, is no doubt the city of Nippur, which was conceived of as the center, or navel, of the world.¹⁸ The lines, marked *a* and *b*, seem to represent the Euphrates and the Tigris while the cross-lines *c* and *d* apparently indicate the Nâr Barsap (Shatt en-Nil) and the present Nahr Isa. Both rivers, the Euphrates and the Tigris,¹⁹ are according to this map supposed to rise from the great salt-river, or the oceanos, whence they flow through a mountain territory *e*. Both rivers take at first a southeastern course, and beyond Babylon a straight southern course, emptying their waters into *f*, which is marked as *bitqu* "canal" and *apparu* "rushes" or "sea-wrack." Beyond *f* is a stretch of territory which has the annotation *uššû*²⁰ "bottom-ground" (*g*). The situation of Assyria is indicated to the right of Babylon by a circle (*h*), while the caption above, in circle *i*, reads *âlu* "city," and that below, in circle *k*, Dur-ilu. To the left in the place marked *l* is the inscription Bit-Ya'kinu, and above in the circle *m* the sign for *âlu*, "city." The three circles with a dot inserted marked alternately *n*, *o*, and *p* are probably Bahr Neġef (*n*), Bahr Shinâfiye (*o*) and Bahr Abû Neġm (*p*) or possibly Hôr el-'Afeč. Outside of the disk, across the ocean is a series of eight triangles, which are inscribed with the word *nagû*, i.e., "land, territory." The triangle marked *q* has the notation "6 double-hours (c. 36 kilometers) within";²¹ what the significance of this is is not clear. The

¹⁸ In the early days the Greeks also seem to have considered their chief sanctuary at Delphi as the center of the earth. At the command of Zeus two ravens (or two eagles) flew from the remotest ends of the earth and met at Delphi. Their images were shown beside a stone, which was supposed to represent the navel of the world. This idea of Delphi as the navel of the world was probably an adoption of the Babylonian idea, which found a more willing acceptance because Delphi was about the center of Greece. And as Delphi was considered not only the center of Greece but of the oecumene (Strabo, ix, C 419), so the Babylonians considered Nippur the center of not only Babylonia but of the whole world.

¹⁹ Thus I interpret the two lines. It may, however, be possible that the lines represent only the Euphrates; but the insertion of Assyria in the map makes my interpretation above more plausible. The Tigris was the stream of Assyria (Gen. 2, 14) and is not likely to have been omitted in connection with Assyria.

²⁰ I read the sign thus.

²¹ The number six appears in both publications, a) Peiser, F. E., Eine babylonische Landkarte, in Zeitschrift fuer Assyriologie, vol. iv, (1889), p. 369, and b) CT xxii

position of the triangle probably points to Anatolia. The triangle beyond the northern mountain bears the annotation "6(?)²² double-hours within, where the sun is not seen." The triangle marked *r* has the reading "seven²³ double-hours within." The notations of length on the map are in no way congruous with those on the reverse of the text, where invariably the number seven appears instead of six. According to Weidner²⁴ the reverse

scheint eine Schilderung der Gegenden jenseits der den Babyloniern bekannten Welt zu enthalten, die Sargon nach dem Verlassen der Meeresküste durchzieht. Es dürfte sich also um den Taurus, den Antitaurus und die Landschaft südlich vom Halysbogen handeln. Es werden im ganzen acht Bezirke aufgezählt, die anscheinend eine Ausdehnung von je sieben Doppelstunden haben. Im ganzen wären das 56 Doppelstunden oder in modernen Wegmassen etwa 337 Kilometer. Die Luftlinie von Alexandrette bis Kaisarije beträgt etwa 250 Kilometer. Ein Marsch durch den unwirtlichen zerklüfteten Taurus verlängert aber diese Luftlinie um mindestens 50-75 Kilometer, so dass die babylonische Angabe mit der modernen Messung in leidlichem Einklang stehen würde.

Weidner thus understands the various triangles as districts along the road from Alexandrette to Kaisariye. This can hardly be the case. The triangle marked *q* is more likely meant to represent Anatolian territory. The other triangles represent other parts of the oecumene. The tablet, which is of Neo-Babylonian or Late Babylonian origin, no doubt goes back to a much older source, and the map, likewise, is no doubt taken from the same or another old source; it can not represent the copyist's own geographical visualization of the world-empire of Sargon of Agade, since the idea, expressed in the map, that both rivers flow out of the ocean certainly goes back to a time when the sources of the Euphrates and the Tigris were still unknown. That was not the case from the time of Tiglathpileser I (1110-1100 B.C.), who in his fourth year had penetrated to the sources of these rivers. It is further-

plate 49. The copyist in this case seems to have copied carelessly the numbers of the double-hours.

²² The number is somewhat effaced, but the reading of seven is excluded.

²³ Strassmeier's copy reads plainly seven, while the number in the CT copy is shaded.

²⁴ Weidner, E. F., *Der Zug Sargons von Akkad nach Kleinasien* - *Boghazkoi-Studien*, Heft 6. pp. 91 ff.

more unbelievable that in the Tell el-Amarna period the Babylonians could still have maintained the idea that their country on the whole map made up the bulk of the earth; such vague conceptions regarding other countries or regions as are expressed here, certainly point to a much older period. But, while the tablet cannot be taken to express the geographical knowledge of the Babylonians in Neo-Babylonian times, it shows clearly one thing; namely, at this time during which there was an unsuccessful renaissance of the Old-Babylonian culture, the late Babylonians were unable to express new ideas, to formulate the accumulated knowledge of later centuries in new ways, or even to square this more recently acquired knowledge with the older views; in fact they disregarded the new to a great extent and went back to the more primitive ideas. On the whole, however, from what we know from other sources and from the development of geographical knowledge among the Ionian Greeks, one must say that this map probably pictured the structure of the earth as it was conceived by the ancients. With a wider knowledge of the oecumene the "districts" of the outer sphere of the "salt-river" would have been incorporated within the circle in their relative positions according to the cardinal directions; but it is a question whether the Babylonians ever disconnected the Persian Gulf and the Mediterranean from the outer ocean that encircles the earth and brought them within the circle; I doubt it.

According to the map and what we know from elsewhere, the Babylonians conceived the earth to be in the shape of a disk, which occupied a central place in the universe.²⁵ The oecumene was divided into four parts, Babylonia in the north, Elam in the south, Subartu and Gutium to the east and Amurru in the west; this is the scheme according to the cardinal points, and the orientation of the Babylonians was, therefore, in matters of geography, to the south.²⁶ In ritualistic practices, however, the orientation was to

²⁵ The Babylonians had no word for "world," "universe," but employed paraphrases instead.

²⁶ Hagen, in *Beiträge zur Assyriologie*, II, p. 244; in Virolleaud, *Adad* no. xx, 10-14 the north is referred to Gutium, while Elam is considered east; in no. xxxiii, 13-16 the order is reversed, east Gutium, and north Elam. In these cases Akkad is considered south.

the east, towards the rising sun. The earth, conceived of as a disk, was brought into relation with the number 40,²⁷ that is to say, the diameter from east to west was divided into 40°, while the sky that domes the earth was divided into 60°;²⁸ the Babylonians, therefore, conceived thus of the ratio of the prime vertical to the diameter as 3:2.²⁹ This, however, was merely a popular view, and goes back to very early days, for the earliest Akkadians (Semitic Babylonians) designated the moon god by the cypher 30, which brought this god into the position of the zenith, a position which he held prior to the rise of the solar mythology. This view furthermore originated in the concept of a non-moving heavenly dome. The Babylonian scholars, at least from the time of the First Dynasty of Babylon, certainly knew the ratio of the circumference of the circle to its diameter, but how they calculated it we do not know. In Egypt even the farmers, in determining the volume of a cylindrical granary, considered the area of the circular base equivalent to that of a sq. whose side was 8/9 of the diameter, which is equivalent to taking $\pi = (\frac{16}{9})^2 = 3,1605$.³⁰ The division of the prime vertical into 60 degrees, instead of into 180, followed the usual practice of dividing any whole into that number of parts, as for instance in the case of the moon-disk: after the whole disk was divided into four parts to correspond to the four periods of the course of the moon, each quarter was again divided into 60 parts, so that the circle of the moon came to have 240 instead of 360 parts.

The Babylonian map referred to above allows making an important deduction concerning the hypothesis, held by all the ancient peoples, that there was an elevation of the earth's surface in the north, a belief which was not eliminated until the sixteenth century of our era. This deduction is based on the fact that the idea which is implied in the word "Rhipaeon" mountain must have

²⁷ The divine number of the earth-god Enki (Ea).

²⁸ See C.T. XXII, plate 49, No. 35385, 6bv., 2. col. 1. 6; and compare IV. R. 61, Col. 2 lines 22-26.

²⁹ On the same view held by the Hebrews see S. Günther *Geschichte der Mathematik*, p. 22.

³⁰ See E. Hoppe, *Mathematik und Astronomie im klassischen Altertum*, Heidelberg, 1911, pp. 43, 44.

come from Babylonia.³¹ For in Babylonia such a belief would have arisen quite naturally, whereas it can not be considered at all natural for the Egyptians, or the Greeks to have derived such a view from their own geographical surroundings. Egyptians as well as Greeks must have taken over the idea from Babylonia, directly or indirectly. The fundamental notions of the Homeric poems, of Hesiod and Aeschylus regarding the earth are all Babylonian in origin. Down to Aeschylus one will notice also that the oceanus was still spoken of as a river flowing around the earth,³² just as the Babylonians spoke of the "salt-river."³³ The idea of an encircling river is possibly older than the idea of an ocean.³⁴

Over against the conception of the earth as a disk in form, a conception apparently held by one group of Babylonians, there was another conception, held by others, that the earth had a quadrilateral form. While the first view had been evolved from observations or considerations which are still unknown to us, the latter may possibly have arisen from a consideration of the large trapezium of Pegasus α - δ . It seems that this area on the firmament was considered an exact counterpart of the earth. As the earth is bounded by the great river (an idea gained from actual observations made during maritime adventures and from a knowledge that in going northward water was again encountered in the Caspian Sea), so also the large quadrilateral of Pegasus was considered to be encompassed by water. Andromeda, the Babylonian "sparrow" was identified with the Euphrates which flows south, while the Tigris was considered to flow parallel to the line between Pegasus α and δ . Two additional watercourses, which later tradition designated as Pishon and Gihon, completed the watercourses around the trapezium. This view, however, must

³¹ F. E. Peiser, in *Zeitschrift für Assyriologie*, vol. iv, pp. 361-370 took *šadû* to mean "east."

³² Whether Aeschylus still actually entertained such view or merely took over the popular notions, is not known.

³³ The Babylonians generally made a great distinction as to the ocean and the river; see B. Meissner, *Assyriologische Forschungen*, in *Altorientalische Texte und Untersuchungen*, I, 1, p. 15 ff.

³⁴ This is another indication that the tablet discussed above is a copy of a much earlier original, although the mention of Bit-Ya'kinu would not permit it to be placed prior to the ninth century B. C. But I think that the name is a later insertion.

have gone back to a time when conditions as they existed in Babylonia were, *mutatis mutandis*, transferred to the sky; namely, it was ultimately based on the cultivated field surrounded by irrigation ditches. For in ancient Babylonia there was a practice similar to the one common in modern Egypt, where in order to regulate the flow of water into the fields, the peasant divides the latter into small squares or quadrilaterals, which are encompassed with earth-banks some 30 cm. high. What was true of such an individual field, was considered to be true also of Babylonia, and the earth as a whole. It would, therefore, seem that a conception of the quadrilateral form of the earth is more ancient than that of its disk-form. But one must not lay too much emphasis on the question of date; the possibility, of course, exists that while the Sumerians held to the quadrangular view, some other people may have brought the other view into Babylonia. Perhaps one would be justified in saying that the one was the belief of the Sumerians, the other that of the Western Semites. The Sumerian belief was retained in the field of religion and continued to find expression in the form of the ziggurat structure, where for architectural reasons the trapezium was turned into a rectangular parallelepipedon, or a cube.

In spite of a paucity of data for determining the extent of the geographical knowledge of the Babylonians, the inference is justified that it was at no time very extensive. That king Burra-buriash did not know how far Egypt was from Babylonia,³⁵ is perhaps of little significance; royal knowledge can not be taken as a criterion for determining the actual extent of knowledge attained at certain periods. But if the body of knowledge had really been any greater than our present data seem to show, the Ionian geographers, in view of what we know of the development of the science of geography among them, would most certainly have taken over and preserved certain elements of that wider knowledge.

A drawback to deep geographical studies lay in the very nature of the discipline itself. Unlike the study of language or mathematics, or even astronomy, the study of geography necessitated

³⁵ Vorderasiatische Bibliothek, II, no. 7, 26 ff.

a large laboratory, in this instance the largest laboratory of them all,—the entire earth. And it may strongly be doubted that Babylonian scholars ever traveled in the sole interest of enriching their stock of knowledge. When once the pernicious doctrine was evolved that whatever happens in the skies happens on earth, and that one has only to read the map of the sky in order to be enabled to come to an understanding of the earth, it meant a check to any serious progress in the field of geography. Merchants and mariners as well as foreigners, it is true, must certainly have brought much useful knowledge about distant countries to Babylonia, and it is conceivable that those scholars interested in geography made notes of what they heard, but any amount of information received in this manner could not lead them to break away from their general conceptions as to the form and structure of the earth; their notions as to foreign countries always remained hazy; to quote the words of the text accompanying the *mappa mundi*: *kiribšina manma la idi*," their interior no-one knows." Meissner correctly states³⁶ that one meets

fast überall in Babylonien und Assyrien anstatt naiver Freude, Beschränktheit und Angst bei der Betrachtung der Natur. Im wesentlichen hat diese Stellung der ungezügelter Aberglaube hervorgerufen, der ebenso bei der Beobachtung der Naturereignisse, beim Gewitter, bei Finsternissen, Erdbeben, bei den Vorstellungen der Kosmologie und bei den meisten anderen menschlichen Verhältnissen eine ausschlaggebende Rolle im Leben der Babylonier gespielt hat.

As far as Egypt is concerned we find that geographical investigations are merely comparable to those in Babylonia. From the Ptolemaic and Roman times we possess an extensive number of nome-lists which go back to older copies and prove that at least the geography of Egypt had been developed to a certain degree. Together with Egypt the southern country of Nubia was the object of study; indeed one of the oldest lists that we have knowledge of at the time of writing presents in good order from south to north the names of fortresses situated in Nubia and after the mention of Senmet enumerates four additional cities (Elephantine

³⁶ Meissner, B., *Die Assyrier und die Natur*, in *Altorientalische Texte und Untersuchungen*, I, 1, p. 18.

to Silsilis) in Upper Egypt.³⁷ Since it was a school text it shows that some kind of geographical instruction was given in the schools of Egypt. The text is placed about one hundred years before the commencement of the XVIIIth dynasty. The practical element as everywhere was also emphasized in geography to such a degree that no room was left for more advanced studies. Also in the field of cartography utility was the standard.³⁸

As regards the knowledge of foreign lands, the most important Egyptian geographical text is the list of cities of Northern Syria which is engraved on the left side of the so-called eighth pylon at Karnak, facing the south side of the large hall of columns; the list originally presented two-hundred and seventy names which Thotmes III had engraved in order to glorify his battles and conquests in Syria. A study of the list has shown that it is based on cuneiform lists which were probably deposited in the royal archives at Thebes; from Thotmes III's time on it became customary to give such lists of conquered cities and countries,³⁹ but this practice to all appearances did not advance greatly the study of foreign geography. The list of geographical names in the sanctuary of Rameses III at Medinet Habu which contains two-hundred and forty-nine names on the two pylons at the entrance, is illuminating. It shows that the scribes at that time had the most hazy ideas about the situation of foreign cities, otherwise it would have been impossible to include African among Syrian names, granted even that the scribe worked with a certain degree of haste. It would seem that the additional geographical information acquired on various campaigns served merely as material for engravings on temple walls, as an adornment and as an added curiosity, but not as data for a deeper study of geog-

³⁷ Gardiner, A. H., An ancient list of the fortresses of Nubia, in *Journal of Egyptian Archaeology*, vol. III, (1916), p. 184 ff.

³⁸ For an Egyptian map of the gold-mines see now H. Schäfer, *Von ägyptischer Kunst*, Leipzig, 1922, p. 181; see also *Cairo Scientific Journal*, no. 89, vol. VIII, February 1914, Alexandria 1914. On a very good topographical map giving the plan of the tomb of Rameses IV, see *Journal of Egyptian Archaeology*, plate XXIX, vol. IV (1917).

³⁹ On various geographical lists see Max, W. Mueller, *Egyptological Researches*, Washington, D. C., 1906, plates 44-87. Down to the time of queen Hatshepsowet very little was known of the regions west of Egypt as is illustrated by the mythical name of the country of *Manu* (Sethe, K., *Urkunden der 18. Dynastie*, II, p. 372).

raphy. Sheshonk I's list of Palestinian cities furthermore shows that at his time the Egyptians still depended on extraneous sources rather than on their own observations, for the list proves that it is merely a piece of compiler's work, based on some North Semitic list written in the alphabetic script. The Egyptian, in reality, was interested only in his own country; other countries had significance only in so far as they came into relation with Egypt.

A certain amount of knowledge of foreign countries, of course, was absolutely necessary for the envoys to foreign courts and cities. What the essence of such knowledge had been we obtain from the well-known Papyrus Anastasi I, in which the scribe Hori accuses his colleague Amenemope of complete ignorance of a geographical and topographical knowledge requisite for an emissary (to Syria).

"Thou hast not gone" he writes (P. 18:7 ff.), "to the land of Khatti; thou hast not seen the land of Upe. (As for) Khedem, dost thou know the nature of it? and of Ygady? What is the Tham'yr (?) -country of Sese like? On which side of it is the town of Khyr . . . ? What is its stream like?" (P. 19:2 ff.) "Hast thou trodden the way to Pamagar, (where) the sky is dark by day, and is overgrown with firs (?) and oaks and cedars that reach the heavens, (and where) lions are more plentiful than leopards and hyenas (?)?" (P. 21:4 ff.) "Come, set me on the road southward to the region of 'Akna! Where is the road of Akhshaph? (At) what city does it turn? Please, teach me about the mountain of Wsr; what is its peak like? Where is the mountain of Shechem?". (P. 22:4 ff.) "Thou hast not gone to the land of Tykhisa, Kawyram'yr(r)wna, Timentiw, Kadesh, Depwrrw, Ithay, Hayranemy. Thou hast not seen Kiryath-anab and Beth-Sepher. Thou dost not know Ydwrwna, nor Thydypwdy. Thou dost not know the name of Khanratha which is in the country of Upe, a bull upon its border (being) the scene of the battles of every warrior. Please, teach me concerning the position (?) of Qyna. Acquaint me with Rehob. Explain Beth-sha-el and Tyraqa-el. The stream of the Jordan, how is it crossed?" (P. 27:7 ff.) "O envoy, where is Raphia? What is its wall like? How many miles march is it to Gaza?,"

Such are some of the questions which Hori places before Amenemope, and he finally winds up with the statement: (P. 28:7 ff.) "I have brought before thee the foreign countries all at once, (and) the towns according to their order. Give heed, incline to us, and look at them calmly (in order) that thou shalt be found able to describe them."

The text is interesting in so far as it throws light on the question as to what was considered the *conditio sine qua non* of an Egyptian

qualifying for civil or military service in foreign countries, about the time of Rameses II. Being used extensively as a text for schools it furthermore gives us an idea what kind of questions used to be formulated in classes of geographical instruction.

Like the Babylonians, taking their start from the axiom that this earth is only a copy of the heavenly world, the Egyptians reproduced the map of Egypt accordingly. The Nile was imagined to have its heavenly counterpart in the ecliptic, along which the sun-god sails in his solar row-boat as a man would voyage on the Nile. It thus was quite natural to place the various districts and cities of Upper and Lower Egypt alongside the sphere of the ecliptic. And since the number of the signs of the zodiac was not sufficient for both divisions of the country, only Upper Egypt was included in the zodiacal signs, while Lower Egypt was associated with twelve other constellations.⁴⁰

The first and second Upper Egyptian nomes were located within the field of Aquarius, the third at Pisces, the fourth, fifth, and sixth in Aries (exc u'd'ng Fau Coptic Phbow, i.e., Chenoboskia which was placed at the point of Taurus), the seventh in Taurus, the eighth in Gemini, the ninth in Cancer, the tenth, eleventh, twelfth, and thirteenth in Leo major, the fourteenth and fifteenth in Virgo, the sixteenth to eighteenth in Libra, the nineteenth in Scorpius, the twentieth and twenty-first in Sagittarius, and the twenty-second nome in Capricornus.⁴¹ Nubia from Maharraqa, the ancient Hierasykaminos, the "town of the sacred sycamore," which marked the extreme boundary of the Egyptian kingdom under the Ptolemies and the Romans, up to Philae was brought into relation with the planet Saturn.

While this arrangement⁴² with its employment of the Baby-

⁴⁰ Being unable to get a sufficient number of constellations for the twenty Lower Egyptian nomes, the number was shortened to twelve, including merely Letopolis, Prosopis, Cynopolis, Sebennytus, Heliopolis, Hermopolis parva, Mendes, Diospolis, Leontopolis, Lycopolis, Naucratis, and Taua.

⁴¹ In Babylonia the line of the ecliptic was divided into three parts, one part, the way of Enlil, was referred to Akkad, the way of Anu to Elam, and the third, the way of Ea, to Amurru.

⁴² Daressy, G., *L'Égypte Céleste*, in *Bulletin de l'institut Français d'archéologie orientale*, Le Caire, tome XII (1916), pp. 1-34.

lonian zodiacal signs is rather of a late origin, the idea of it is by no means late. In fact it is an extremely ancient idea dating back to the earliest dynastic times,⁴³

The Babylonians as well as the Egyptians who certainly must have heard about the new ideas which had originated among the Greeks, shut themselves up in their own world of thought and excluded everything that was not in harmony with traditional knowledge sanctioned by their religions. Thus the knowledge of the true form of the earth, which goes back to the fifth century B.C., did not enter into the Near East, otherwise Herodotus would have given up his views (which were those of Anaximander) regarding the disk-form of the earth. Herodotus seems to have been enshrouded so deeply in the Oriental mythological views, that he was unable to embrace the elements of a more correct knowledge. What is true of this Greek is even more the case with the scholars of the ancient Near East. Too stubbornly they held fast to the old, and their conservatism was unable to eliminate the false notions in their geographical studies.

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⁴³ Expressed for instance in the famous ivory tablet of King Menes, on which the human shape of the sun-god is blended with his hawk form, so that the solar bird sails in the cabin of the huge ship; also expressed in many passages in the Pyramid Texts. Just as the traveler on the Nile, the sun-god is supposed to undergo various experiences on his journey. In prehistoric days when simple reed rafts were used, the sun-god also journeyed in such a structure of two reed-bundles tied together. The adventures which the sun-god has in his solar boat and the adversaries with whom he has to cope during his journey, of course, do not symbolize clouds and eclipses, but are simply taken from the experiences of the ancient Nile travelers. The 'Island of the Blessed' since the earliest dynastic days was likewise visualized analogous to the Nile Valley with all its divisions.

THE ANTIQUITY OF THE USE OF IRON

By GEORGE BRINTON PHILLIPS

THE antiquity of iron is still an interesting problem. By whom was it first discovered, in what country was its early use, and at what date, are questions not yet decided. It is obvious that the discovery of specimens of iron in the form of tools and weapons with some historic data, promotes investigation and discussion. It suggests that the first country to produce iron was probably one in which the pure ore was easily obtainable and the natives were sufficiently advanced in civilization to appreciate the benefits of what might have been an accidental discovery and take advantage of it. Several countries with ancient civilization and historic data have claims to its earliest use or at least show some familiarity with it, or are able to produce objects made of prehistoric iron. Probably from a purely historical point of view, the accounts given by the writers of the Old Testament who speak of iron implements would justify some consideration, and Mr. W. Belck has in his paper on the subject quoted some passages from the Bible to prove not only that the Philistines had the knowledge of iron, but were familiar with steel. He quotes the following passage in I Samuel XIII.

Now there were no Smiths found throughout the land of Israel for the Philistines said Lest the Hebrews make them swords and spears. But all the Israelites went down to the Philistines to sharpen every man his share, and his coulter, and his axe, and his mattock. Yet they had a file for the mattocks, and for the coulters, and for the forks and for the axes and to sharpen their goads. So it came to pass in the day of battle that there was neither sword nor spear found in the hand of any of the people that were with Saul and Jonathan; but with Saul and Jonathan his son was there found.

Mr. Belck at once states that he believes unquestionably their weapons were of *Steel*, and in another passage from Joshua XVII where "chariots of iron" are mentioned, we should understand, he says, they were "chariots of steel." It would seem this conclusion arrived at without any collateral evidence is rather premature.

If the mattocks, coulters and axes were of *steel*, a file of the same hardness as the weapons to be sharpened would be of little use, but if these implements were iron, copper or bronze a file would have produced a cutting edge sufficient for offensive purposes. The quotation would point to some other metal rather than steel. The trouble with rendering the true translation of the word in speaking of *metals* by the old writers is, we are not sure what is meant, thus the word "Ayas" in Sanskrit means "metal" and was first used to describe copper or bronze, then came to signify iron. Metal objects from Judea are often called "bronze," an alloy of copper and tin, when as a matter of fact they were *not* bronze, but pure copper. Prof. Montelius has pointed out that the hieroglyphic word for iron might mean metal, copper, bronze or iron. Ancient writers like those of the Old Testament were neither chemists, scientific metallurgists, nor archacologists, and did not have an accurate knowledge of the metals dealt with, or the means for determining their composition. Mr. Belck in his paper on "Iron" believes the Philistines were the early users of iron and steel, but may have derived, he says, the knowledge from Crete; but as specimens of iron from that centre of ancient culture seem to be wanting in the British Museum collection and as none of the iron weapons described in the Old Testament have as yet been discovered, Mr. Belck does not seem to have proved his assertions. It has been suggested that the Negroes of Africa had an iron industry at a very early period, and that the Egyptians obtained their knowledge from them, but there is no evidence to prove this.

M. Maspero believes that the Egyptians in ancient days undoubtedly had a knowledge of iron, but he adds, there is "nothing in their monuments or in the museums to indicate that they used or even knew of hardened steel." He admits however that considering the enormous amount of stone cutting work done in building their temples, pyramids, statues and obelisks, iron implements must have been used, but "steel tools" he shows were not necessary for the purpose. He then goes on to state that he "ordered from a native artist of great ability a granite statue in Egyptian style"; the workman used for cutting the

stone "points of soft iron." He had some fifty of them at his disposal and after each point had become soft (blunted) after three or four blows with the mallet, a fresh one was used and the dull tool put in the fire and sharpened by hammering. The statue, a half figure, was completed in about three weeks. Thus with the use of soft iron tools and having plenty of them ready, the cutting of the hard granite was accomplished and steel tools were not necessary for the work. Professor Montelius does not believe the use of iron in Egypt was earlier than 1500 B.C. and it was not until 1200 B.C. it assumed importance. Sir William Flinders Petrie, who is recognized as a high authority in all Egyptian matters states

"iron was known in Egypt from the middle of the prehistoric civilization and well authenticated in the IV dynasty 3000 B.C. and in subsequent eras, but he thinks not in general use until about 500 B.C."

He believes there is no reason why iron should not have been known as early as copper, as pure oxide of iron is easily reduced to metallic iron (wrought iron) at a moderate heat, and this wrought iron at a red heat can be hammered into objects of different shape. The same authority suggests that the Egyptians obtained native iron from the Sinai region, where pure haematite beds of oxide of iron lying in contact with a carboniferous stratum were subjected to the intense heat of a basalt outflow produced native iron.

Sir William records the existence of an iron halberd blade of Ramses III as the earliest known Egyptian iron weapon, date about 1200 B.C. Five iron tools which he obtained in Egypt believed to be about 2500 years old dating back to 700 B.C. were particularly interesting as two of them were hatchets with wide lugs for binding securely to wooden handles. These tools showed no trace of rust. A double axe $11\frac{1}{2}$ inches long, with hole in the centre $1\frac{3}{8}$ in. diameter for handle, which must have been either punched out, while red-hot, or drilled with a tubular drill, is dated 400 B.C. Two iron knives, one $14\frac{1}{2}$ inches long, with a cast bronze handle, date 800 B.C. The iron hatchets were of similar shape as that type of bronze hatchets frequently found in Egypt. Some iron tools belonging to the time of the Assyrian invasion of Egypt 666 B.C. were found at Thebes; when magnetized they showed

permanent magnetism, proving they were hardened to some extent, having the property of steel.

There is an account of a piece of wrought iron having been discovered in the great pyramid of Khufu of the fourth dynasty, which would indicate that iron was known to the Egyptians about 2700 B.C., but no details are given of the circumstances under which it was found. Unless this piece of iron was used in the building as necessary to its construction, it might be questioned whether it may not have been left there at a *subsequent period*.

Sir William Flinders Petrie found at Abydos a piece of iron, a copper mirror and a bronze tool together of the Sixth dynasty. It is said the iron was enclosed in a piece of fabric and lay on top of the mirror, the bronze tool apparently in *contact* with the two metals. If in the lapse of centuries the fabric should have become saturated with the saline water percolating through the soil, a galvanic current might have been established between the two metals, which would no doubt have hastened the oxidation of the iron and converted it into a mass of iron rust. May not this little specimen of iron have been some valued trinket or charm? Being highly prized by its owner, it may have been placed with the mirror in the tomb as a votive offering, suggesting that iron objects were rarely seen in those days.

Sir Robert Hadfield, a very eminent authority on iron and steel, states that information contributed from the East points to a knowledge of the metallurgy of iron in India and Ceylon more than a thousand years ago. In his interesting address before the Iron and Steel Institute he describes an account of a large number of specimens of ancient iron and steel obtained from the buried cities of Anaradapura 437 B.C. and Polonnaruwa 769 A.D. in Ceylon, and to be seen now in the museum at Colombo.

This collection of axes, adzes and other tools, contains steel chisels of the 5th century A.D. from these sites, believed to be from 1200 to 1800 years old. Sir Robert states that some of these implements of ancient Sinhalese iron were subjected to a standard physical test, microscopic examination, and chemical analysis, giving interesting results indicating the metallurgical knowledge of these workers of iron in Ceylon.

The chemical analysis of the chisel gave

Carbon	traces	Specific gravity 7.69
Silicon	0.12	
Sulphur	0.003	
Phosphorus	0.28	
Manganese	nil	
Iron	99.3	

The microscopic appearance of a transverse section of the chisel shows it has been carburised on two sides. This carburisation varies in the two faces from 0.2% to 0.9% saturation point, and its micro-structure suggests the important fact that it had been quenched. This carburisation of the chisel indicated that this knowledge of hardening tools by the cementation process was known 1500-2000 years ago.

A wrought iron nail, of probably the same date as the chisel in the Colombo collection was analyzed. Result—

Carbon	traces	Specific gravity 7.69
Silicon	0.11	
Sulphur	nil	
Phosphorus	0.32	
Manganese	nil	

The nail tested for hardness showed it was not hardened by quenching, but was wrought iron. This collection of specimens of Sinhalese iron which Sir Robert Hadfield examined contains arrow heads, spear heads, sword blades, stone cutting chisels and other tools, knives, blades, sickles, reaping-knives, nut-cutter blades, etc., in all some 250 specimens which suggest how extensive the iron industry of India was at that early period. Sir Robert does not think there is any evidence that the metallurgy of iron was understood by the ancient Egyptians, but they may have known of it and have received aid from India or China, through the routes of commerce, possibly getting hardened iron tools from these countries, and thus enabled to undertake their enormous work in Egypt.

Mr. J. M. Hearsh, director in the Indian Iron and Steel Company in 1837 says the antiquity of the Indian process for making steel is greater than in any other country. No nations acquainted with the art were as old as the Hindu, he asserted, also that the

stone-cutters' work in Egypt could only have been done with tools of iron, probably cemented or hardened steel.

Dr. Percy, distinguished metallurgist, agrees with others quoted that the use of iron had a very ancient origin and he believes it preceded the so-called Bronze Age, while another authority, Mr. Day, in his work *Prehistoric Use of Iron and Steel* states "that the earliest of all substances with which man was acquainted was unquestionably iron and almost certainly steel."

Dr. Ananda K. Coomaraswamy, D. Sc., formerly principal mineral surveyor in Ceylon in his work on *Mediaeval Sinhalese Art* says "the knowledge of iron is of great antiquity in India." Being well known in the Vedic period, it is constantly referred to in Vedic literature, and the book cited gives an account of the various evidences of ancient iron and steel manufacture.

It seems to be generally admitted by high authorities that the enormous amount of stone-cutting in ancient Egypt was done with iron tools or possibly of steel, rather than with the flint or bronze tools found in numbers about their temples and tombs. If, as has been suggested, these iron or steel tools may have been obtained from India, and the Egyptians found them much more serviceable for cutting their hard granite, is it not probable that these superior implements would have been highly prized owing to the difficulty in getting them and not allowed to be carelessly lost or hidden in the tombs? May they not have been so cared for as to be handed down to successive generations until they were lost sight of when merged into the Iron Period, which would account for so few iron tools of prehistoric times being found? No doubt iron tools lost or mislaid in the sands of the desert would in the course of centuries have lost their metallic appearance and be converted into iron rust owing to the corrosive nature of nitrates in the soil of the Nile.

The conversion of soft iron into hard steel, a definite combination of iron and carbon was an enormous improvement in tool making, and a general advancement when the use of metals was employed in the arts. Just as the discovery of iron may have resulted from heating in the domestic hearth a lump of pure iron haematite ore in a very hot fire, with plenty of fuel, reducing the

iron to the metallic state, so the hardening of soft iron with a surface of steel (case-hardening as it is called) may also have been the result of accident. The domestic hearth, after cooking the meat for the meal, may have had scraps of hide or other animal matter to be consumed thrown in and a poker made from a piece of soft wrought iron, immersed in the glowing embers to stir them.

The soft iron, now red-hot in contact with the burning animal matter and its decomposing cyanogen compounds, absorbed sufficient carbon to form a steely surface; the poker, being too hot to handle, was chilled by thrusting it into water and the discovery now made that its nature was changed, and that it was much *harder* than before. This fact doubtless would arouse curiosity and the experiment would be repeated, the knowledge of case-hardening been thus acquired. Case-hardening takes place at a temperature of 850°C and is produced by gaseous bodies such as hydro-carbons, carbon monoxide and cyanogen, by liquid molten cyanides, by free carbon and cyanogen derivatives. Hydrogen has been found to decarburise steel at a temperature of 8 or 9 hundred and to render it as brittle as glass. If the tools used in Egypt were obtained from Ceylon they may have been case-hardened iron, which being superior to bronze would have been an advantage in sculpturing great masses of stone like the Colossus of Rameses II, 57 ft. in height, weighing two million pounds, or the great stone coffins for the Sacred Bulls at Sakkara. These stone boxes cut out of a single block of black granite are 13 ft. long, 7 ft. wide, and 11 ft. high, and were hollowed out with straight walls and sides squared with the accuracy of the cabinet-maker's work, which must have been a matter of difficulty even with the best of tools.

England with its long civilization, its distinguished inventors, and the sturdy manhood of its race is silent about its early iron industry, and never seems to have made claims to the discovery of iron, although London has had a continuous existence from the time when the Celtic Britons founded the city on the banks of the Thames four thousand years ago! These Celtic Britons who arrived about 2000 B.C. were acquainted with Bronze, and with their superior weapons, bronze swords and shields subdued, the

natives armed only with flint spears and arrowheads. By the middle of the first century when the Roman occupation took place London was an important commercial centre, a populous and flourishing city that traded with the continent and exported Cornwall tin. In the year 61 the British warrior queen Boadicea revolted against the Roman rule and it was only after three battles with her army estimated at one hundred thousand men, that the rebellion was suppressed. This was in the first century, a thousand years after the Iron Age culture was recognized in England and Italy and if the Romans fought with iron weapons, as they doubtless did, there is good reason to believe the Britons were also armed with iron weapons. An interesting question then is suggested where did the multitude of swords, battle-axes and other iron weapons with which the Queen's forces were armed come from?

As there are various proofs that iron was produced in Britain centuries before the Roman occupation, is it not probable that England had an extensive iron industry at that early date, and manufactured its own arms and various other objects of iron? The only surprising thing is that from the cemeteries so very few swords and arms of this period have been unearthed, although in the course of two thousand years many may have rusted away. It is known, however, that England had a currency of iron bars (probably of domestic manufacture) at the beginning of the Roman occupation for large deposits of them have been found at Malvern Hills, like sword blades 22 inches long; others still heavier have been dug up at Winchester and at Maidenhead. At Glastonbury, a very ancient site with no contact with Roman civilization, a number of iron currency bars have been found resembling swords of the same period. In other places where interments have been excavated, skeletons of warriors with their shields and swords have been discovered, and from the Thames have been taken iron chariot wheels, bridle-bits, spear-heads and many other objects of iron manufacture. An interesting discovery of an old Roman camp *Corstopitum* in the north of England near Corbridge in the Tyne disclosed the fact iron smelting had taken place there during the Roman occupation probably about 300 A.D. A bloom

of iron was found which was 39 inches long, with thickness from 7 to 8 inches and $4\frac{1}{2} \times 5$ inches, which weighed 3 cwt. 8 lbs. and was encrusted with a rusty scale $\frac{1}{4}$ inch thick. The clean metal when analyzed gave

Carbon	0.061
Silicon	nil
Manganese	nil
Sulphur	0.008
Phosphorus	0.063
Slag	0.32

This block of wrought iron was made probably by welding together lumps of iron obtained by the reduction of the ore in small charcoal fires, some portions of the bloom contained 0.5—1.50% carbon and gave it the character of steel. This iron was found among purely Roman objects and believed to be of Roman origin. Perhaps some day an ancient cemetery of the first century may be discovered in England and the iron weapons of brave Queen Boadicea's army be unearthed, and the claims of priority for the Hallstatt cemetery in the Austrian Tyrol with its 6000 specimens of iron be disputed. Thus far the iron of the Hallstatt period dating back to 850 B.C. is considered the oldest industry.

PHILADELPHIA,
PENNSYLVANIA.

THE ETHNIC POSITION OF THE SOUTHEASTERN ALGONKIAN

By FRANK G. SPECK

THE Algonkian culture area of the coast of eastern and southeastern Virginia and eastern North Carolina, which may be designated as the old Virginia tidewater area, was among the first to be invaded and described by English-speaking explorers in North America. Thomas Hariot, in a book of 1588-90, wrote the descriptions accompanying a series of sketches of native life, villages, and social customs drawn with remarkable accuracy by the artist, White, who accompanied Raleigh's expedition for the founding of the English colony on Roanoke Island. The region was then occupied by the most southerly extended Algonkian-speaking tribes, forming a group whose divisions lay in a contiguous territory from the Neuse river in North Carolina as far north as what is now the Virginia state line. Northward of this imaginary border, through the Chesapeake Bay region to Maryland, we have evidence of the same dialect spoken, but of a slightly altered economic and social framework. Gradually the entire area has come to be known as the southeastern Algonkian linguistic and culture group. The upper or Chesapeake portion, which was inhabited by tribes forming a confederacy under Powhatan, has acquired, among ethnologists, the appropriate designation of the Powhatan culture area. The southern division may be conveniently called the Carolina Algonkian area.

Since it has become generally shown in America that linguistic and culture boundaries do not coincide either in time or space, it is impossible to refer to the southeastern Algonkian culture type as having limits within the territory where Algonkian dialects have been located. For instance, on the southern and western borders of the area were tribes speaking Siouan languages, but we have no patterns of their ethnology adequate to aid us in determining whether they shared ethnic traits with the southeastern Algonkian or not. The same is true when we consider the

Iroquoian-speaking Meherrin, Mangoac, Nottaway and Tuscarora, who resided also on the southwestern fringe of the Algonkian strip. Were we to rely solely upon archaeological evidence, the widespread similarity of form, material, and function shown in stone and ceramic remains would indicate a culture unit over the area occupied by all the peoples just mentioned, and even farther south and west. We might then simply treat the tribes of the area under present discussion as an ethnic group without attempting to assign definite boundaries to it.

While the name and dialectic boundaries of this area have been well recognized, little has actually been done toward the classification of its cultural features and almost nothing along lines of comparison with related neighboring groups. This is especially true in respect to the determination of what influence may have been exerted upon it from the outside and on the other hand what effect its presence had upon neighboring groups. Toward this end an attempt may now be made, since a pressing need has come for brief culture summaries, like that of Kroeber's in a recent number of the *American Anthropologist*, covering the less known areas in order that they may be employed in comparative studies. Something in this direction has already been carefully attempted by Willoughby¹ and more sketchily by Mooney.² A more detailed study of the existing bands and a reconstruction of some topics of Powhatan ethnology has been completed by myself, which, combined with the essays just mentioned and the numerous older sources, have served as a basis for the résumé which follows. The real source contributions, however, to the ethnology of the southeastern Algonkian have come from the pens of the immortal Capt. John Smith, Wm. Strachey, and Robert Beverley, whose words, though written during colonial times, afford us not only a wealth of information concerning the country and people but specimens of the kind of interest in scientific description which throw credit upon the keenness and accuracy of early English authors who dealt with the new world.

¹ C. C. Willoughby, *The Virginia Indians in the 17th Century*, *American Anthropologist*, n. s. vol. 9, 1907.

² J. Mooney, *The Powhatan Confederacy Past and Present*, *ibid.*, vol. 9, no. 1, 1907.

The southeastern Algonkian constituted a single dialectic group so far as the meagre existing lexical material permits us to conclude. The archaeological remains from the region also indicate unity. Documentary economic, social, and religious ceremonial descriptions likewise show uniform development in those departments of culture, allowing, of course, for certain points of difference between the two subdivisions mentioned.

In respect to native government the sway of the life-long hereditary dynasty of Powhatan seems to have leveled what slight differences in local forms there might have existed before European contact. Our knowledge of the entire region then in almost every particular indicates a culture area which was extended from Albemarle sound to the Potomac river, between the Piedmont zone and salt water. Only a more specific consideration of some topics of social and religious life warrants the subdivision into the Powhatan and North Carolina sub-groups, previously referred to. This statement bounds the ethnic horizon sufficiently for one to proceed to a first attempt at a summary of the tribes and characteristics of the southeastern Algonkian group.

Smith, Strachey, Beverley and some others whose accounts agree in most particulars, state that there were in the neighborhood of twenty-six to thirty-two smaller tribes in the confederacy which developed under Powhatan in the early 17th century. From the various authorities of the time, but based chiefly upon John Smith's narrative, Mr. Mooney and myself planned the chart (Figure 10) which pretends to assign the general location of these units to something like their proper places. In view of the fullness of the descriptions left us it was not so difficult to do, so it seemed more advantageous to provide in charted form an outline of the location of the tribes, than to refrain wholly from the undertaking on account of some doubtful elements of information.

The tribal subdivisions of the area were numerous. In the following list we may follow the enumeration of Smith for the bands of the northern or Powhatan group. The bands of the southern or Carolina group are best known from Hariot and Lawson from whose pages Mooney and Swanton have assigned their locations.

I. POWHATAN GROUP.

<i>Tribes</i> ³	<i>Location and Chief Towns</i>
Tauxenent	About Gen. Washington, i.e. Mt. Vernon, Va.
Patowomeke (Potomac)	Potomac Creek.
Cuttatawoman	About Lamb Creek on Rappahannock River.
Pissasec	Above Leedstown on Rappahannock River.
Onaumanient (Onawmanient)	Nomony River.
Rappahanock	Rappahannock River, Richmond Co.
Moraughtacund	Moratico River.
Secacaonie (Secacawoni)	Coan River.
Wighcocomico (Wicomoco)	Wococomico River.
Cuttatawoman	Cowtoman River.
Nantaughtacund	Port Tobacco on Rappahannock River.
Mattapoment (Mattaponi)	Mattaponi River.
Pamunkie (Pamunkey)	Romuncok, King William Co.
Werowocomico	About Roscow's (?), Gloucester—about opposite mouth of Queen Creek.
Payankatonk (Payankatank)	Turk's Ferry Piankatank River.
Youghtanund	Pamunkey River.
Chickahominie (Chickahominy)	Orapaks Chickahominy River.
Powatan	Powhatan James Falls at Richmond.
Arrohatoc	Arrohatocs, Henrico Co.
Kecoughtan	Roscows, Elizabeth City Co.
Appamatoc	Bermuda Hundred, Chesterfield Co.
Quiocohanoc	About Upper Chipoak Creek, Surrey Co.
Warrasqueak (Warrasqueoc)	Warrasqueak, Isle of Wight Co.
Nansamond	About Chuckatuck, Nansemond Co.
Chesapeake	About Lynnhaven River, Princess Anne Co.
Accomack (Accomac)	About Cheriton (Cherrystone Inlet), Northampton Co.

II. CAROLINA GROUP.⁴

<i>Tribes</i>	<i>Location and Chief Towns</i>
Weapemeoc (Yeopim)	North of Albemarle sound, west to Edenton.

³ Mooney information, 1920. He retained the English plural (s) in his original notes, but this I have omitted for philological reasons.

⁴ Regarding the identity of some of these there is doubt. For example Mooney in the *Handbook of the American Indians* entered the Neuse as probably an Iroquoian tribe, but subsequently followed Swanton in accepting an Algonkian conviction. That the Chowan may have been a branch of the wide-spread Shawnee seems to have been overlooked by ethnologists yet it is possible on the basis of name and location.

Chowan (Chowanoc)	Eastern bank of Chowan river.
Secotan	Between Albemarle sound and Pamlico river.
Mattamuskeet (Machapunga, Hatteras (?))	Islands back of Hatteras.
Hatteras	Islands about Cape Hatteras.
Pamlico (Pamticough)	Pamlico river and estuary of Neuse river.
Pomouik (Pamawaioc)	Bear river. (Possibly identical with Pamlico).
Neuse (Neusiok)	South of Neuse estuary.
Pasquotank	
Poteskeet	North of Albemarle sound, probably
Perquiman	divisions of the Weapemeoc.

A word as to population. Mooney after a careful survey of records estimated the Powhatan group to have contained about 8500 souls, or about one inhabitant to the square mile of habitat. For the Carolina group we have only one attempt at estimation and then practically no basis for its correction. An author, of unknown identity,⁵ writing in London 1850, estimated the Virginia territory south of Cape Henry to contain 30,000 natives, which would of course be something of an overestimate for even so fertile and populous a region. A survey of the present Indian descendants of the whole southeastern Algonkian group still shows the persistence of the native population to the approximate number of something over 2000.⁶

Roughly outlined, the culture area, from the point of view of archaeology and recorded ethnology, embraced that portion of eastern Virginia south of the Potomac river through North Caro-

⁵ Peter Force Tracts, Vol. III, No. XI, London, 1650, signed by E. W.

⁶ From manuscript prepared on this topic it appears that the following mixed tribal groups exist in the same general locations where their ancestors lived. These places are indicated on the chart by triangles enclosed in circles; Pamunkey 300+, Mattaponi 75, Upper Mattaponi 75, Chickahominy 400+, Rappahannock 500, Nansamund 200+, Wicomico (?) 300 (?), Potomac 150, Hanover Co. (Powhatan) 15+ (?), Werowocomoco 100+, total 2115+. In North Carolina there are a number of uninvestigated remnant bands of mixed Indians. For example the Machapunga are represented by about 100 survivors on Roanoke Island. Some of these bands are organized by incorporated charters, others are still tribal Indians on state reservations; the Pamunkey and Mattaponi. The Rappahannock, Chickahominy, Nansamund, Nanticoke and Upper Mattaponi succeeded in reorganizing the "Powhatan Confederacy" in 1923, in an attempt to hold together the various bands in the region as a body. The idea of racial segregation and reconstruction is growing among them and will probably develop into an advantageous local social movement.

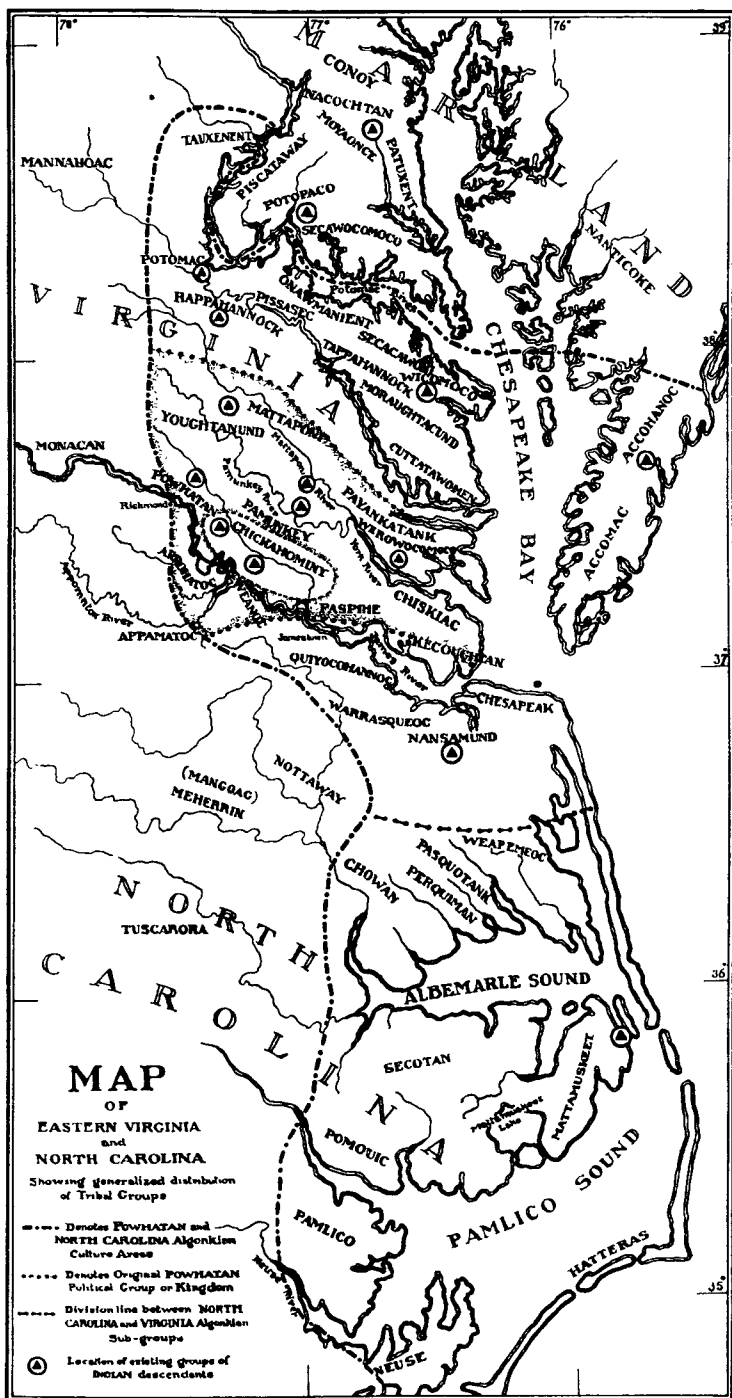


Fig. 1.

lina to the Neuse river; all the territory lying east of the Piedmont, or the fall line, running irregularly from Washington through Fredericksburg, Richmond, Petersburg and so southward. Approximately speaking, on each of the great tidal rivers this western girdle of the area was only a little above the tide line. The southeastern Algonkian definitely possessed a culture adapted to the tidal stretches of the coastal plain. They exhibit well an illustration of Dr. Wissler's theory of altitudinal habitat, having of all the Algonkian peoples the most extensively unelevated habitat. The determining factor was their aptitude for fishing. The same culture no doubt marked the tribes of the North Carolina coast below Pamlico Sound, though this will have to be more definitely ascertained by ethnologists because south of the Neuse river the Algonkian sequence is continued by Siouan groups about whom very little is known at present. On the eastern shore of Chesapeake Bay along the Accomac peninsula dwelt the Accomac and Accohanoc, included also under Powhatan rule, as far north as the Maryland line. Yet the Powhatan culture circle cannot accurately be said as yet to have extended over them although John Smith left us the definite statement that the Accomac spoke the language of Powhatan and acknowledged his dominion. If subsequent archaeological research establishes a relationship here closer to the Powhatan than to the Nanticoke above them, it may mean that the Accohanoc or Accomac did not migrate into the lower peninsula from its northern base, but that they crossed Chesapeake Bay moving eastward, tracing their expansion directly from the Powhatan units with whom they remained in touch.

Up to this point we have considered the boundary features of the culture group which became so well known as the Virginia or Powhatan Confederacy. Evidently the surmises of ethnology that the Powhatan group bore close resemblance to the Corey and Nanticoke, are reasonable. And going even further the culture connection is extendable in larger terms to the Delaware.⁷ Among the earmarks of unity over the whole territory

⁷ M. R. Harrington's summary of Delaware ethnology has been used in this connection, *American Anthropologist*, vol. xv, no. 2, (1913) and *Religion and Ceremonies of the Lenape*, Indian Notes and Monographs, Museum of the American Indian, N. Y. (1921).

just noted, were the practices of cleaning the bones of the bodies of chiefs, and preserving their bodies or bones in houses consecrated to the purpose,⁸ the burial ossuaries, the cranial deformation, idol ceremonies directed to supernatural beings called *okee*, the new fire rite, the scratching rite and the emetic at harvest time in southern Virginia and North Carolina, a priesthood-shaman order, the members called *quiocos*, and the quasi-monarchical form of government; also many technical and industrial traits, showing forth in architecture, ceramics, basketry, clay pipes, the feather work, and prominently in the elements and utensils of maize, tobacco, and bean cultivation. Relationship confronts us as a likelihood in other fields of activity such as warfare, fishing and hunting.

For instance, the relative shortness of the hunting season, in contrast with intensity of agriculture, the deer-drive and the practice of using fire in driving game, the communal village hunt, in general all savor of the Gulf culture area. Certain fishing practices do also; the use of the basket trap, killing fish by poisoning the streams with vegetable juices, and shooting fish with an arrow tied to a line, all being customs attributed to the Virginia tribes in the past, as well as to the Creek and the Siouan populations of the Carolinas.

To the foregoing summary of Powhatan culture traits may be added some more whose far southern affinities are suggestively shown forth. These, to be sure, cannot be classified dogmatically until tests have been carried farther. A very useful résumé of Virginia ethnology, based upon seventeenth century sources, is given by Willoughby in the article previously mentioned, in which he considered a number of Virginia religious institutions to have been "adopted from the southern Indians."⁹ We may add that a similar

⁸ The custom of bone cleaning and the bone-house burial—the latter even under the same name as in Virginia (*Nanticoke*, *awacason*, *chiocason*; Virginia *quiyough-cosughes*),—recorded of the Nanticoke of Choptank river (D. G. Brinton, *A Vocabulary of the Nanticoke Dialect*, *Proceedings of the American Philosophical Society*, vol. xxxi, 1893, p. 327), was gradually working its way northward and was adopted in historical times by the Delaware of the "Wolf Clan" and recognized by them as of Nanticoke derivation (M. R. Harrington, *Religion and Ceremonies of the Lenape*, *Museum of the American Indian*, *Indian Notes and Monographs*, p. 183, 1921).

⁹ Willoughby, *op. cit.*, p. 63.

inference may be drawn from the occurrence of such characteristics in Virginia as the pot-drum used in dances; that is a drum consisting of an earthen pot containing some water and covered with a piece of stretched hide, the "roached" hair fashion affected by men, the dressing of the hair among priests by shaving off all in front except a visor-like ridge across the forehead, the use of body decoration in the form of feathers stuck onto the skin after it had been coated with a sticky oil, wearing on the person the dried head of an enemy, the weaving of feather mantles, one-piece garments of the "poncho" type, the absence of tailored garments, the moccasin of one piece of leather gathered together in one long seam reaching from the toe up the instep, the "reed" or bamboo knife, the cone-shaped metal arrowhead of historic times, the "sword" or club with small pieces of stone set like teeth along both edges, all remind the ethnologist of certain well-known far southern culture traits.¹⁰

Agriculture was certainly fundamental, four varieties of corn, tobacco, beans, squashes, gourds, potatoes, which latter may indeed have been correctly artichokes, grass nuts, and possibly *yucca filamentosa*, being the crops. The associated arts of a sedentary life, pottery, clay pipes, splint and grass basketry, as has been previously shown, were well developed.

At this point it may be noted how few things there are of an older northern Algonkian pattern to be found in the early descrip-

¹⁰ These articles of industry are mentioned in the article by Willoughby previously referred to in which he fully cites references in Smith, Strachey, and Beverley, to the early documents describing them. His article is indispensable as a summary, so it hardly seems necessary to document the above-mentioned facts. I might add a few additional references to Willoughby's citations. For the body decorations of feathers Beverley (History of Virginia 1722, p. 149) says "to make themselves appear yet more ugly and frightful they strew feathers, down, or the hair of beasts upon the paint while it is still moist and capable of making these light substances stick fast on." The knives of cane are described by Smith (Tyler edition, N. Y. (1907), p. 102) and the stone-edged "swords" by Smith (op. cit. p. 102), and Lord Percy (Narratives of Early Virginia, Tyler Edition, *ibid.*, p. 14). The one-piece moccasin of the southeastern type was seen by Beverley (op. cit. p. 128), "the skin being drawn together like a purse, on top of the foot and tied around the ankle." The stone-edged (microlith(?)) club has been found by Clarence B. Moore in Florida, and something similar is also known in Eskimo ethnology. Its relationship in Virginia is, however, more probably with the southern article.

tions of Virginia. But the knife with blades of beaver teeth, woven rabbit-skin robes, the use of the head-skin of the deer as a decoy in stalking, and the subdivided individual hunting territories may be of this derivation, though most of them are widespread in America and therefore possibly old and general properties of the continent. The absence of the conical pointed wigwam of the northern Algonkian and Great Plains area points also to southern architectural influence in Virginia.

Such correspondences, with the south, would seem to provide reason for making a conclusion, in fact the main one arrived at after going over the contents of the Powhatan culture area, namely that we have a migrant Algonkian group transformed extensively by contact with the Gulf or Southeastern area.

In the North Carolina sub-group we have strong indications, from the illustrations of White, of what is evidently Muskogian influence in the ceremony of the corn harvest (the "busk" of the Creek), with its ceremonial adjuncts, the emetic or "black drink," the scratching rite and other details. Except that in White's pictures the people of Secotan are seated in a circle instead of in the "square" ground of the southeastern tribes, we might imagine the procedure to be a Muskogian one. Other ceremonial and religious rites of special significance are the burial customs, bone burial, cleaning the bones of important persons, the mortuary house or temple, and the like.

The social unit of the area is impossible to determine. We have no direct information bearing on the question. Smith's observation on the maternal descent of Powhatan's dynasty is suggestive but not conclusive. Chieftaincy descent may have been at times maternal in the same group where the common people may either have had no sib or have had an economic social determination; for instance, the hunting territory institution like the Delaware as was recently shown by MacLeod, (*American Anthropologist*, vol. 24, No. 4, 1922). It may be regarded as a likelihood that the Powhatan group had an organization of a similar nature, since the hunting territory basis is common to both.

If one were induced to point out what special preferential relationships in culture, if any, showed forth in this region it

would undoubtedly be the features of religious and political autocracy, which latter had assumed under Powhatan the form of a true Algonkian dynasty. Both developments appeal to the culture type of Siouan peoples in the Carolinas and farther south, where hierarchic and royal privilege were so impressive as culture traits that they seem quite unlike the usual thing in native North American government.

All native mythology is now gone, and none was placed on record by the Virginia adventurers. Even though a fairly large body of folk-lore and superstition remains among the Indian descendants, there is nothing ethnically distinctive about it. Animal tales and some personal narratives of European and negro extraction, locally adapted to the condition of recent Indian life in the region, are all that we now have to represent the oral tradition of this area.

There is little archaeological differentiation from the other parts of the middle Atlantic coast, though ceramic texture and form are relatively crude. Pottery vessels had generally pointed bottoms, without flaring or shouldered rims, and the clay substance abundantly provided with pebbles and mussel shell material. The shell heaps along the coast and river shores, where aboriginal mollusk-curing operations were conducted, are numerous but shallow. This does not indicate great age. The occurrence of clay smoking-pipe fragments among the usual pottery forms extending from top to bottom of the shell deposits furnishes evidence that tobacco culture was present among native industries at the first migration. No stratification or superimposed levels are indicated. For the most part the layer of refuse and the deposits containing the residue of human industry are not much more than 10 to 16 inches below the surface. The shells of clams and oysters, black loam, potsherds and stone artifacts rest upon the undisturbed yellow sand or ocean mud bottom of Tertiary deposition. In view of the apparent lateness of human occupation through the thinness of the deposit layer we have the testimony of a tradition recited to Strachey by Powhatan that the Powhatan peoples had been in Virginia only about three centuries. It may not be held as a strictly valid inference

by many at present, but despite the evidences of a cruder stone age, (slate, quartzite and argillaceous material) intermingled with a finer age of industry everywhere present in the tidewater region, neither is deep nor characterized by special types or separate levels. Even the slate and soapstone implements, which incidentally have been accepted by Parker,¹¹ and for a while by Skinner, when occurring in New York state, as suggestive of an Eskimo industry, lose much force in view of their appearing on the surface of eastern Virginia and North Carolina associated with similar forms of implements, arrowpoints, scrapers, knives, and spear-heads made of quartz, quartzite, chert, jasper-like flint, and flint, which are considered as materials of a later period. Would anyone think seriously of making out a case for Eskimo occupation upon the basis of these occurrences as far southward, over unglaciated country, as Virginia and North Carolina? The archaeological content of the Powhatan area, along the Chesapeake, can not be differentiated from that of the Virginia and Carolina highland section and the Delaware region. Similar hard stone material and forms are discovered over the whole Atlantic section from the Alleghanies to the sea, from the Carolinas northward through southern New England, except for the intrusion of Iroquoian ceramic patterns and the polished celt at certain points especially in New England. Here in the southeast, however, at the very doors of a southern Iroquoian habitat (Meherrin, Tuscarora) we find the Powhatan industries to have kept remarkably free from borrowing. This is certainly true of pottery and pipe forms. Virginia Algonkian ceramics are in brief in close resemblance to what in New York and New England has been described by northern archaeologists (Willoughby, Moorehead, Skinner and Parker) as archaic Algonkian. The walls of the pots are thick; their size large, the material unrefined and gravelly, the surface

¹¹ Even Hawkes (*The Labrador Eskimo*, Geological Survey of Canada 1916, pp. 2 and 17) admits a scattered Eskimo population as far south on the verbal authority of Skinner. Skinner in his recent statements (*American Anthropologist*, Vol. 25, No. 1, 1923, p. 96) more logically inclines to regard Parker's "Eskimoan" evidences in New York state as a phase of archaic Algonkian culture; relying upon a certain fundamental similarity between Eskimo, old Algonkian and Athabaskan culture, which is of late coming to be more generally recognized since it was broached some years ago by Boas.

not extremely well smoothed, the bottoms very pointed and the rims generally straight. The surfaces of the pots are decorated with cord, net, and, less frequently though occasionally, with incised angular designs. The latter I may add from having looked over material in eastern museums besides that actually in the ground, increases in abundance the more one goes southward along the coast toward South Carolina and again toward the mountains. Admitting withal that the archaeological question is still an open one, I believe we may say without prejudice that the Powhatan area has affinities with the southern coast region, and that similar types reach northward to southern New England.

The southeastern Algonkian area turns out to be one of considerable importance. The reason for this lies in the bearing it had upon the absorbing problem of Algonkian distribution. The Virginia tribes were geographically situated near the southeastern terminus of the great linguistic family. Their culture was therefore marginal to the stock, and yet on account of its advancement and complexity it appeared as a peak of culture sufficient to deserve rank as a distinct sub-center; in short, a marginal sub-center. The complexities are, however, by no means baffling, inasmuch as the main source of influence from the outside may be distinctly traced to the southeastern or Gulf area, without specifying whether it arose from a Muskogian or possibly an older eastern Siouan, or even an Iroquoian civilization. The Virginia tidewater Algonkian, as we shall see with increasing emphasis, appear to have been less Algonkian in culture than they were in speech. A similar change of culture has been noted in the history of the prairie Algonkian whose Algonkian affinities stand forth only through the link of language. The parental linguistic characteristics of the Virginia branch of the stock were retained with remarkably little modification other than phonetic shifts, yet in respect to material and social life the Powhatan tribes had become converted by southern influences to such an extent that their culture status, had we no information concerning language to guide us, would deserve to be included with the Gulf area rather than with the Algonkian of the north. As to racial classification at present we know practically nothing,

yet a determination of physical type would go far toward solving the problem.

A second feature of importance in an attempt at the interpretation of culture movements in this area is the part played by these intermediate Algonkian in conveying to their northern kindred tribes, through Pennsylvania, New Jersey and even as far as southern New England, a revised adaptation of southern ethnic traits. Thus there was created a northeasterly culture migration, affecting, by the introduction of agriculture and its arts, the industrial and social life of Algonkian groups far into the hunting area of the north. We then are led to see where the Algonkian of the North Atlantic and southern New England states got their corn, bean and tobacco culture and most of the artifacts concerned in those sedentary activities, their splint basketry, woven fabrics, especially the remarkable feather technique, their mat and bark-covered rectangular wigwams, dome-shaped instead of conical in form, and many other details of economic life which can best only be hinted at as yet. Other traits, extending as far as the southern New England coast, to be traced with this point of derivation in view as a possibility are the "long-house," the stockaded villages, ceramic influences, fish nets, shell beads, the ungrooved adze or "celt," the water-drum, the flageolet, the netted stick ball-game (similar to lacrosse), methods of hair-dressing, and the unpuckered one-piece moccasin. The culture complex of agriculture and ceramics has already been treated suggestively by Kroeber and Spinden,¹² while in another paper I presented a similar case for splint basketry. In surveying the social and religious aspects of eastern Algonkian life there is a strong suspicion that from the southern portion of the continent brought along by Iroquoian migration, also came such traits as the matrilineal reckoning of descent, with animal totemic associations. With the foregoing also came the development of autocratic power vested in the hands of the hereditary chief, the

¹² H. T. Spinden, *Origin and Distribution of Agriculture in America*, p. 269; A. L. Kroeber, *Tribes of the Pacific Coast*, (p. 393), both articles in *Proceedings 19th Congress of Americanists*, 1915, Wash., 1917. Also Kroeber, *American Anthropologist*, vol. 25, no. 1., 1923.

confederacy idea centering about the "Long House,"¹³ the weakening of the Algonkian institution of the hunting territory as the nomadic hunting life gave way to agriculture, and finally such an agricultural rite as the corn harvest festival, to which may be added shamanistic societies, religious communalism in general, mound erection, group burial, and no doubt far-reaching influences in mythology.

In brief I feel a certain security in making a preliminary interpretative conclusion that the explanation of eastern, more properly Atlantic coast, Algonkian culture relationships, may be understood as resulting from a southeastward migration of Algonkian-speaking peoples, who gradually, after reaching the culmination of their drift, probably somewhere on the western shores of Chesapeake bay, cultivated the superior economic and social properties of the south and then, secondly, after its assimilation served in the northern spread of the resulting culture-complex.

The question of chronology might be thought of in this connection. There seems to be some fairly good evidence that the southeastern Algonkian drift was a relatively recent one. We have an eastern migration legend, the *Walam Olam*, accredited to the Delaware and their neighbors, relating to a period not much before the historical era when this group of people migrated into Pennsylvania and New Jersey. The archaeological phenomena of the Chesapeake region are not suggestive of great antiquity; there is homogeneity over a single rather thin surface stratum. And finally we have the ensuing historical testimony. Strachey, the most explicit author on Virginia ethnology, estimated from what he had been told by the Powhatan that the Indians had, at that time, not been inhabitants below the falls of the James (the site of Richmond) for much more than 300 years (Strachey, *op. cit.* p. 23).

There seems to my mind to be still better reason now than there was seven years ago for the following statement of the situation in the southeast as I saw it then, that the Carolina Algonkian

¹³ An obscure but important statement from Strachey tells us that the towns and forts of Powhatan, and the country in general of Powhatan, were known as *Tsenacommacoh*, (Strachey *op. cit.* p. 29).

were comparatively recent intruders into the region and formed the last offshoot of the general Algonkian movement southward along the Atlantic Coast, where, step by step, it seems, wherever the advancing bands settled down, the migration appears to have been continued later by a smaller offshoot, until the moving force had expended itself.¹⁴

An interesting problem stands forth if this be true: Why should the Algonkian, drifting southward across the Alleghenies and down the coast, have retained their parent speech when they acquired a more advanced material culture by contact with outsiders? Among various possibilities it may be met by assuming that the Algonkian immigration was a rather sudden one carried forward by warlike men who took the women and children of the invaded territories, that its coming was met with hostility by the resident peoples, that it brought the immigrants into an unfamiliar and exotic southern climatic environment where already a well-adapted sedentary culture was found established. These requirements are logically met if we regard the old Algonkian center of distribution to have been in the Canadian zone, say in the regions about the Great Lakes, and the advancing wave to have collided with eastern Siouan bands among the mountains and on the eastern slopes, or with other cultures of the southeastern of Gulf type. The preceding remarks accordingly lay down some conclusions which have been the outcome of a rather long period of research both in the field¹⁵ and through the older published records of the Atlantic Coast region. I would hardly venture to offer them in such definite form were it not for the conviction of their basic correctness, of which amplifications are still to be expected as more comes to be known concerning the surrounding cultures in the Carolina and Gulf area, and in the upper Mississippi valley.

Although the argument, if it is one, may not have been presented in its details with sufficient art to bring out its most

¹⁴ Remnants of the Machapunga Indians of North Carolina. *American Anthropologist*, Vol. 18, No. 2, 1916.

¹⁵ This work was carried on under the auspices of the Museum of the American Indian (Heye Foundation) N. Y., and the collections of ethnology from the region are to be found in this institution.

convincing aspect, nevertheless, for the fundamental idea of a fairly recent Algonkian migration into the southeast there seems to be some basis.

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NATCHEZ POLITICAL EVOLUTION

By WILLIAM CHRISTIE MacLEOD

NATCHEZ social organization deserves careful study for a number of good reasons. Our data on the cultures of the southeastern coasts of North America are deplorably scant and these cultures are extinct; on the Natchez alone do we have material in any abundance for study. The Natchez data display to us a culture remarkably unique and different from other known American cultures in many important respects. In its most peculiar and important traits of politico-social organization it is more comparable to Old World than to other known American cultures, and is consequently of especial interest in the general problem of convergent evolution versus diffusion by migration and by imitation. Its peculiarities of political structure, moreover, are such that all controversies as to the causes and content of social stratification must take careful account of them. And last but not least, the facts will be needed by the writers and artists of the new America when, following the almost forgotten lead of Chateaubriand, they appreciate the romance and beauty of Natchez history and Natchez character.¹

In the following pages references to sources will be made through the compilation of materials made in 1911 by Dr. J. R. Swanton; and it is possible to refer to nearly all the needed materials through this rich volume.²

¹ Chateaubriand's two romances dealing with the Natchez are "Les Natchez," and "Atala"; they are of little interest to the twentieth century reader however; and even the drawings of the great Dore which illustrate the original publications are lacking from our point of view because they are not true to the Louisiana landscape.

² Although my interpretation of the data occasionally differs from some tentations offered by Dr. Swanton in 1911, my indebtedness to the author will be appreciated by the reader in the course of reference to the 1911 volume referred to. See Swanton, J. R. "The Indian Tribes of the Lower Mississippi and Adjacent Coasts of The Gulf of Mexico," Bulletin 43, Bureau of American Ethnology, 1911. This volume contains a complete bibliography to which should be added at this date however,—Swanton, J. R.: "A Structural and Lexical Comparison of the Tunica, Chitimacha, and Atakapan Languages," Bulletin 68, Bureau of American Ethnology, 1919, and De Villiers, Baron Marc: "Documents concernant l'histoire des Indiens de la région orientale de la Louisiane," *Journal de la Société des Americanistes de Paris*, v. 14, 1922.

THE STRUCTURE OF THE STATE: THE CIVIL STRATIFICATION

The Graded Nobility. The principal offices in the Natchez state were prerogatives of members of a matrilineal royal family, all the members of which were denominated Suns. The king was known as The Great Sun; his mother,—or, in case of her death, his sister,—was The White Woman, or, merely, the Sun Woman. Aside from the king all Sun males were known as Little Suns; and apart from the White Woman, all other royal women were denominated merely Sun Women. As concerns rank within the family, *primogeniture* seems to have been the rule.³ The king would seem to have ruled directly over the Grand Village, or capital; the outlying villages, at least those of Natchez population, being *ruled by other members of the royal family* in order of rank.⁴

³ The Luxembourg Memoir (p. 100) says that the Suns are more or less respected according to their degree of proximity to the king. Dumont (p. 104) says that the eldest son of the White Woman becomes king and her second son becomes Great War Chief, while her eldest daughter becomes her heir. (Cf. Du Pratz, p. 106; Penicaut, p. 140). The tribal origin myth (p. 170) says of the children of the pair ancestral to the royal family "that the eldest of the males should be sovereign and the eldest girl the princess who should give birth to the sovereign," and, "in the absence of a sister of the sovereign his nearest female relative should be the mother of his successor." It is possible further that the Natchez are among those peoples with whom an eldest nephew of a deceased chief succeeds in preference to the chief's next brother. (Cf. data concerning The Bearded in De Richebourg, pp. 199-204.)

⁴ The tribal tradition as given to Du Pratz by the king, (p. 170) mentions " . . . the other Suns who governed the villages" in ancient times. The old chief of the Flour Village (circa 1725) was apparently a Sun and presumably a brother of the king. Besides his office of village chief he held the extremely important office of Master of Temple Ceremonies; an office, furthermore, in which he "is also master of the mysteries, since, according to them, he speaks very familiarly with the spirit." During the last Natchez war the Great War Chief (1731) speaking of the apparently recent,—since the death of the old chief, no doubt,—usurpation of the office of Flour Chief by one "who although not noble, had seized the place he occupied" informed the French that the office "made him the third person in the nation, and gave him absolute power over all whom he commanded." When the wife of Tattooed Serpent, deceased Great War Chief (1725) was reluctant to fulfil her obligation to die by strangling at the mortuary ceremonies of her husband, she was drawn aside from within earshot of the French observers and persuaded to comply with Natchez custom by three men,—the king, the Great War Chief, "and the Sun of the Flour Village,"—the last no doubt being the Master of Temple Ceremonies. Petite, in describing mortuary ceremonies involving sacrifices says that they are held on the death of the king and of his brothers and sisters (leaving us in doubt as to whether they were held for others than Suns.) Dumont incidentally lets us know that such ceremonies were held at the death of the

Charlevoix says that the king "appointed," Le Petite, (from the same source) "nominated," all the officers of the state. This may have been true in the case of lesser offices, but was probably not true for offices which were the prerogatives apparently of near relatives of the king. But other than these higher offices such as that of Great War Chief, Master of Temple Ceremonies (a high-priestly office), Chief of the Flour Village, there were lesser offices about which we are ill-informed. There were eight guardians of the temple's perpetual fire,—two serving during each quarter of the moon,—and above them was the "chief of the guardians of the fire," known as the temple guardian. Other civil offices were, "two officers to regulate what is done in treaties of peace and war; one that has the inspection of public works, and four others who are employed to order everything in the public feasts." (Charlevoix-Le Petite, pp. 102-103.) Dumont mentions "a chief of the grain" who "takes care that the sowing and harvesting are done." (p. 150).⁵

While the group called Suns were at the top of the social strata, the commoners, called Stinkards (*Puants*),—a name which

Flour Chief. (Du Pratz, pp. 162-163, 148, 152; Le Petite, p. 143; Dumont, p. 156, 157; Charlevoix, pp. 246-247. Cf. the functions of the Taensa office which apparently corresponded to that held by the Natchez Flour chief, in Iberville, pp. 266-267. Here, as with the Natchez, the chief guardian, of the temple and its sacred fire, was a different personage.) Dumont speaks of going to "the house of Yakstalchil, second war chief of the Flour Village, who lived in the great village near the temple," suggesting, as does the data on The Bearded (supra, p. 1, n. 1.) that at least some village war chiefs were Suns (The Bearded was either an uncle or a brother of the king, and was a war chief of an outlying village, apparently that of the Walnuts [Hickories]). The note on Yakstalchil suggests something of the centralization even of residence which may be implied in some of our notes on the Taensa; of the Taensa Tonti notes that in the king's residence there was "an alcove where the chief [king] reposes, and with many camp beds on which repose the chiefs of the villages which are situated on the lake and which depend on him." Membre says that "The temple, cabin [of the king], and seven or eight cabins of the old men are surrounded by stakes and make a kind of fort" The old men mentioned in Membre's note of course may not be the village chiefs, but some council concerning which we are ignorant. (Dumont, p. 150; Tonti, p. 259; Membre, p. 263.)

⁵ The Charlevoix-Le Petite source speaks of two war chiefs and two masters of ceremony. Note the existence of two *types* of head war chiefs in the Natchez social organization (supra, p. 210) and Dumont's reference to the "second war chief" of the Flour village. The temple guardian may have been considered a second master of ceremonies. (Cf. supra, p. 202, n.4; Du Pratz, p. 152; Iberville, p. 267.)

offended them if used in their hearing (Du Pratz, p. 105),—were at the bottom. It was unbreakable custom with the Natchez *that male and female Suns, even the king and the king's sister, should seek their spouses only among the Stinkard group!* The children of male Suns, because the matrilineal reckoning applied to the inheritance of noble blood and rank, could not inherit their father's social status. They did not, however, fall to the low rank of their Stinkard mothers, but constituted *a second rank of the nobility* or part of it, and were known as Nobles. Concerning the Nobles we have the word of Dumont and Du Pratz, that the children of Nobles descend to the rank of Honored Men (the third and last rank elevated above the commoners); and that the children of Honored Men descend to the grade of Stinkards.⁶ Unfortunately they fail to inform us if it is only the children of male members of these two classes who fall in rank.⁷ There is intimation from but one of our informants, and that quite unsatisfactory, that Nobles, like Suns, must marry Stinkards.⁸ Apparently Nobles, unlike Suns, did not have

⁶ The Charlevoix-Le Petite source, Penicaut, and the tribal tradition,—which we have probably only fragments of,—do not mention the fall in rank of the progeny of Nobles; but Du Pratz, recorder of the tribal tradition does mention it, and with convincing detail.

⁷ Du Pratz however (p. 105) states of male Suns, that their children bore only the name of Nobles, and that the *male* children of Nobles were but Honored Men. Immediately after he speaks of the *children* of Nobles falling to the Honored rank. (The Honored class probably was for women as well as men; certainly we know that it included the wives of the Honored men. It may well be that in his first sentence the reading, or the writing, should have been,—the *children of male Nobles*. But that we cannot decide.

⁸ Penicaut says that “. . . a girl noble, . . . daughter of a chief noble [Sun] . . . is only able to marry a plebeian . . .,” and “the children of these marriages are nobles or Suns.” (p. 101) The difficulty here is that we are not sure but that “these marriages” is meant to include a preceding mention of the marriages of female Suns or not. Very possibly such inclusion is meant, in which case we have a note indicating caste exogamy for the Nobles and inheritance of Noble rank through a Noble mother. (The daughter of a male Sun would bear only Noble rank.) Penicaut, it may be added, seems to refer to the Suns as “chief nobles” and the Nobles as merely “nobles.” A Sun Woman would be a “chieftainess noble.” All our informants have the habit of speaking inclusively of “the nobility,” and Du Pratz specifies the included ranks in introducing the subject when he names all three upper ranks; Penicaut never speaks of the Honored class and probably does not include it when he speaks of the nobility.

In the conversation recorded between the White Woman and Du Pratz caste or class exogamy for the Nobles is apparently implied; but there are contrary implications in the same conversation. (See *supra*, p. 215)

sacrifices at the mortuary ceremonies held at their death, but this is not specifically stated. We are in fact obliged to leave the data on the Nobles and on the Honored Men without being able to decide if caste exogamy and marriage with Stinkards, and matrilineal inheritance, held also for them as for the Suns; but the evidence for *the gradual descent of the descendants of male Suns through the Noble and the Honored classes into the grade of Stinkards in the course of three generations* is dependable, and the important fact of the exogamy of the Sun group is quite clear.

The matrilineal reckoning and exogamous rule of the Sun group lend it something of the attributes of a mother-sib. But the group apparently was not numerous, and if it truly were a mother-sib it must have been quite small. La Harpe in 1700 stated that there were but seventeen Suns; Le Petite in 1730 gives eleven; but in neither case is it clear if Suns of both sexes are included, and Suns of all ages, and Suns who might be resident in the outlying villages, as well as those in the capital. Statements of the White Woman to Du Pratz may be interpreted to indicate that Le Petite's estimate is an actual total.⁹

Penicaut's Observation. If the Sun group were really so small as available data seems to indicate it would be excellent evidence in support of what the writer considers the probable fact concerning the Sun group,—that it was *coextensive with the matrilineal royal family*, this royal family including only those who stood within several specified degrees of relationship, unilaterally reckoned, to the White Woman (or, from another point of view, to a White Woman ancestress). The evidence for this is from Penicaut alone, and not all that might be desired. But Penicaut's observations relative to this matter must have had meaning; and the meaning we attribute to them seems most probable. Penicaut, speaking of the "nobility" says: "Their extraction . . . is no more considered noble at the seventh generation . . . " (p. 101). Now in Penicaut's reference to the "nobility" we cannot tell if he refers only to Suns, or to Suns and Nobles considered as

⁹ See Swanton, 1911, p. 44. The king, in recounting the ancient glory of the Natchez (traditional) stated that there were in those olden times five hundred Suns,—which was his estimate of a tremendous number (p. 170). Cf. also *supra*, p. 215, n. 31.

one group; the Honored class he has taken no cognizance of, nor has he described the gradual fall in rank of the lineage of male Suns,—which gradual fall in rank he is therefore not apparently referring to (which fall, anyway, would be completed in three generations). A group of eleven or so Suns, however, would indicate an inclusion, in this reference, of the Nobles. Penicaut observes further concerning the temple interments that these included only “the three first families (*racés*) of nobles.” The suggestion is, therefore, that the royal family or Suns were limited to three degrees remove (matrilineally only) from the White Woman; children of even Sun women when three degrees removed falling into the Noble class and the progeny of these Noble women in three more generations falling further,—presumably into the Stinkard class eventually, with a stay of one or more generations in the Honored group.¹⁰ A positive contradiction of this interpretation exists in Du Pratz’ notes to the effect that “As the posterity of the two first Suns [legendary] has become much multiplied, one perceives readily that many of these Suns are no longer related and might ally themselves together, which would preserve their blood without any mixture, but . . . ,” and here our author explains that this has been rendered impossible because of the mortuary requirements (p. 106). Although in the

¹⁰ *Racés* is the eighteenth century French term used by Penicaut; see Swanton 1911, p. 150; and Margry, (editeur): “Decouvertes et Etablissements des Français dans l’ouest et dans le sud de l’Amérique Septentrionale (1614-1754) Paris, 1877-1886, v. 5, p. 452. We may note also that, even if Penicaut had anywhere recorded observations on the Honored class, it would remain improbable that such were buried in the temple. The tribal tradition states that only Suns might enter the temple (p. 170). Du Pratz says that only Suns, and “those attached to the temple service” ever entered it (p. 161). Dumont says that only the king and his mother ever entered,—“as well as some Honored Men . . . ” (p. 161). If Dumont’s note is correct it may well be that these Honored Men were those, or among those, attached to the temple service. Their Stinkard wives, and Nobles who died with them, however, were buried in the temple with Suns (Dumont, p. 157; Du Pratz, 149). For the Taensa (possibly) see Le Petite, p. 269. Some support of the interpretation may lie in the fact that while Du Pratz (p. 145) describes La Glorieuse as a Noble woman, Dumont states that she was “a descendant of the *woman* chiefs” (p. 151), that is, perhaps, a descendent of a Sun Woman rather than of a male Sun; but of course Dumont may have had no such distinction in mind. But further excellent support is contained in the citation from Charlevoix, *supra*, p. 224.

immediate context Du Pratz mentions only the prohibition of brother-sister marriage, it is probable that by "no longer related" he refers to the prohibition of marriage between cousins and second cousins. The observation made by Penicaut, however, it must be noted, is one which could readily escape a casual observer, and Du Pratz here is writing, not so much as one who is recording an additional observation, as one who is relying on very slender data collected in the past to make a point concerning new inferences about the mortuary ceremonies, and he may have even stretched a point in favor of his own thesis.

One need not be surprised to find among the Natchez such limitation to an arbitrary number of degrees remove from a common group ancestor of different relationships, for comparable phenomena appear in many other cultures of America and the Old World. Among the Skqomic Delta Salish for example, a family group "comprised the blood relatives of a given family on both sides of the house for six generations," and within this extensive group of relatives, marriage was forbidden.¹¹ The Algonkian of the region of Manhattan according to De Raziere, (and he intimates that the same applies to the New England Algonkian), forbade marriage "to the third degree," but,—evidently only for the purposes of social duties connected with blood revenge,—they reckoned "consanguinity to the eighth degree."¹²

The Irish kin group,—the *fine*,—was for different social purposes or functions, subdivided into lesser kin groups; reckoning patrilineally only, from a common ancestor of the group, the entire *fine* included all descendants to and including six degrees remove; the lesser groups within the *fine* included relatives three, four, and five degrees remove, respectively. Anyone born beyond three degrees remove from a king ancestor was not counted royal and was not eligible to the kingship. The whole *fine* was responsible for crime and punishment; property of a deceased person was divided among those three degrees remove from the ancestor of the deceased (anciently it seems, among the whole *fine*).¹³

The original Aryan-speaking group seems to have been the source of these Irish distinctions. The Armenians today forbid marriage to anyone related within seven degrees remove on the father's side and within six degrees on the mother's. In the early Roman church, marriage was forbidden to relations less than seven degrees remove.¹⁴ The Aryans of India of the time of the writing of the Grhyasutras and Dharmasutras and of the laws of Manu

¹¹ Hill-Tout, C.: "The Skqomic," Annual Report, British Association for the Advancement of Science, 1900, p. 477.

¹² De Raziere's Letter, pp. 108, 109, in "Early Narratives of New Amsterdam."

¹³ Mac Nielle, Eoin: "Celtic Ireland," Dublin, 1921, pp. 171, 174, 176.

¹⁴ Wallis, W. D.: "Some Phases of Armenian Social Life," American Anthropologist, 1923, p. 582 seq.

had similar provisions. There is evidence that they obtained also among the ancient Greeks and Romans.¹⁵

Especially among the Japanese, however, do we find something still more comparable to the suggested Natchez situation. With them the Son of Heaven, known to foreigners as the Mikado, was the source of royal and noble blood. The upper strata of the nobles were the Shinno (Shin-Wo). These were the princes of the blood. The rank of Shinno was inherited by the eldest son of a Shinno, but younger sons of a Shinno became merely Wo, forming a part of the second stratum of the nobility. Moreover, Shinno rank could not be perpetuated indefinitely from its source, the king. After the sixth generation from its source even the eldest son of a Shinno must fall to the Wo class. The Wo class therefore is composed of two elements,—younger sons of Shinno, and eldest sons of Shinno whose Shinno parents were six degrees removed from a king ancestor. The Shinno class was continually replenished by the children of each succeeding king, and their children.¹⁶

THE WAR ORGANIZATION

The Warrior Grades. Further examination of the materials on the civil organization of the state of the Natchez is to be pursued first by reference to the structure of the war organization. This war organization was divided into grades or classes. There were three of these grades,—the apprentice, the ordinary, and the true warriors (Du Pratz, p. 129). Among the true warriors, or above them, were the war chiefs. We know little of the composition of these groups; but Dumont (p. 104) notes that a Stinkard may rise to membership in the group of Honored Men (a civil grade), by taking a scalp or by performing some equivalent *coup de guerre*, such as cutting off the tail of a horse or mare; the Stinkard's new honor would raise also his wife to membership among the Honored, and would permit both of them to wear tatoo marks; a new name would be given him to memorialize his exploit; and if in the future he further distinguished himself in warfare, acquiring new or accumulated honors, his name would be again and again changed to signalize his increased rank within the war organization,—for within the several grades of that organization there was an established precedence among individuals based on honors acquired (Le Petite, p. 125). It is not indicated, however,

¹⁵ Cf. Wallis, W. D.: "Indo-Germanic Relationship Terms As Historical Evidence," *American Anthropologist*, 1918, p. 420 seq.

¹⁶ *Encyclopedia Britannica*, 10th ed., 1910; article "Japan."

whether or not a Stinkard could rise higher than the Honored Class in civil life by means of his war exploits; and the evidence indicates that there was no other way in which he could so rise. But of the Noble class Du Pratz says (p. 105),—speaking apparently only of those Honored Men who are children of male Nobles,—that “These Honored Men might by their warlike exploits be able to *reascend* to the rank of Nobles, but their children again become Honored Men, and the children of these Honored Men, as well as those of the others, were lost in the people and placed in the rank of Stinkards.”

The fact is then apparent that there was an amount of *filiation or interlacing of the grades of the war organization and of the civil organization*. Unfortunately we can not determine fully to what extent this had gone. Presumably the requirement we have noted, which when fulfilled would raise a Stinkard to Honored rank, was the minimum requirement for a rise from the grade of apprentice to that of ordinary warrior. As for higher warrior grades, Le Petite (p. 125) says that “To deserve the title of a great man slayer it is necessary to have taken ten slaves [captives], or to have carried off ten scalps.” Tattooed Serpent, the Great War Chief, on his decease had a chain of forty-six links, each one said to have represented an enemy slain. (Dumont, p. 157; Du Pratz, pp. 144, 149.) We do not know if such a distinction would raise a Stinkard, or even an Honored Man of other than Stinkard origin, to the rank of a true warrior; probably it would, but beyond this it seems he could not ascend to the rank and exercise the functions of a war chief. War chiefships it seems were open only to Suns and Nobles.¹⁷

The Council. Having in mind the probability that war chiefships were open only to those of rank above the Honored, we may now consider the council which, in times of war, or in

¹⁷ Swanton, 1911, p. 107, —reference to La Harpe. Cf. also *supra*, p. 202, n. 4. The Great War Chief, brother to the king, counted coup along with the meanest warriors. It would be indeed interesting to know if he and the war chiefs, were ever outboasted by commoners who had more coups to count but who could not rise to war ranks which were the prerogatives of noble birth. Fortunately no Stinkard could ever outboast a noble, because as soon as a Stinkard took a scalp he became an Honored Man.

dealings with foreign nations, displaced the king as a first authority. This was primarily a council of war and foreign affairs; there is no indication that like the corresponding council of the Creek tribes it had any function to serve in internal affairs.¹⁸ It was composed of "the oldest and best warriors." In it no doubt were most influential those referred to by our informants as "the old war chiefs." At a war dance or feast the initiating speech is not made by the Great War Chief but by "the oldest out of condition for following the others on account of his great age." This aged man is referred to by the informants as "the ancient war chief." And it is he who at the war feasts first takes the war pipe, giving it to the Great War Chief to smoke, then passing it in order of their war rank to each warrior, finally smoking it himself. It is he who bestows new names and ranks as they are earned by the enterprising warriors. (Le Petite, p. 125; Charlevoix, p. 124; Du Pratz, pp. 129-130.)

In a council called to consider disturbed foreign affairs the case for war is argued "by the war chief, who omits nothing to excite his nation. He is so much the more interested, as these chiefs are not nearly so much respected during peace as during war."¹⁹ After his presentation the old warriors discuss the question in the presence of the great chief or sovereign of the nation. This great chief, as well as the great war chief, is only a witness, for the opinion of the old men always prevails over those of the two chiefs, who subscribe willingly to it on account of the great consideration which they have for the experience and wisdom of these venerable persons." (Du Pratz, pp. 127-128.)²⁰ An

¹⁸ Cp. *supra*, p. 211.

¹⁹ To judge from the office which among the Creeks, etc., was analogous to that of Great War Chief among the Natchez, it would seem that this presentment of arguments favoring war was made as a more or less ceremonial function by the Great War Chief. In such case our informant's comments may represent a misinterpretation of a ceremonial duty as something coming from the heart. Certainly the Great Tattooed Serpent, a Great War Chief, was always the keeper of the peace between the Natchez and the French and their allies.

²⁰ The young king taken captive and enslaved in 1731 with the destruction of the Natchez nation said of the massacre of the French which opened the last Natchez war: "I am well aware that it will always be ascribed to me, because I am the sovereign of my nation, yet I am quite innocent;" and explains "that he was too young to speak and that it was *the ancients* who had formed this criminal project." (Charlevoix, p. 246.)

ambassador may be despatched; he will be chosen from among "the old warriors," and a company of able-bodied warriors sent with him. At a council called to prepare for defense against a foreign offensive "all the war chiefs are present, having with them the old warriors and their great chief at their head in the presence of the sovereign." "When all who have been called to the council having repaired thither the great war chief makes a speech in which he endeavors to represent the reasons which they all have for exacting vengeance for the insults which have been made them." He exhorts "the war chiefs who are under him," to make like speeches "to all the warriors." A war feast finally is held in the cabin of the Great War Chief, a dance following (Du Pratz, p. 128).

Finally we may note an element of decentralization in the Natchez war organization, a feature common to the more democratic North American tribes.²¹ War parties were recruited of volunteers, and it seems that any war chief might at any time endeavor to recruit such a war party and lead it against a nation with whom no peace treaty existed. (Charlevoix-Le Petite, pp. 124-125.)

All of this formal stratification of the able-bodied men of the nation into age and honor groups is a wide-spread phenomenon in "primitive" or "pre-literate" society. It is very elaborately developed with the Plains Indians, with whom the Natchez had physical and cultural contacts and no doubt imitated to a limited extent,—compare the counting of coups at a post,²² the nature of at least one of the coups, recording the cutting of a horse's tail,²³ and the use of numerous war bundles or shrines. The Natchez war organization, however, suggests comparison primarily with that of the Creeks, where there were three grades of warriors, a War Speaker, and superannuated warriors acting as a council of importance. With both Creeks and Natchez there

²¹ In Powhatan's empire warriors were drafted and compelled to render military service at the call of their king. See Mac Leod, W. C.: "The Origins of the State: The Problem Reconsidered in the Light of the Data of Aboriginal N. A." Phila., 1924.

²² Coup counting at the post is recorded for New England by Wood, "New England's Prospect," 1634.

²³ Diffused of course subsequent to the European introduction of the horse.

was also the association of the principal or head war chief or speaker with the color red in tribal ceremony and his ceremonial opposition to the civil chief whose color was white, in a ceremonial dichotomy of the tribe.

RELIGIOUS MERIT AND THE HONORED CLASS

Final observations on all the above cannot be made until we note still another unique feature structurally associated with the Natchez social stratification.

There is still another way in which a Stinkard may rise to the Honored class,—through meritorious religious service to the state. If a woman Stinkard has a babe in arms at the time of the death of a king she and her husband may strangle it at the bier of the dead king and thereby be elevated to the Honored class. And if a Stinkard resolves to follow the king into the other world,—“to their pretended paradise,”—eight of his Stinkard relatives act as his executioners, strangling him, and these eight relatives become Honored. (Dumont, p. 105; Du Pratz, pp. 145-146; Penicaut, p. 140.)²⁴

These practices are comparable even in minute details, (shells, moss, etc.) to mortuary *and purely religious sacrifices* of the Taensa, with whom apparently a rise in rank followed for merit so won; but of the Taensa practices we have very limited data. While Iberville was among them a thunderbolt struck the temple and the resulting fire destroyed it. The master of mysteries of the temple called upon women with babes in arm to bring their children to be thrown into the fire in order that the spirit might be appeased. Five babes were thus sacrificed before the French stopped further immolations. Iberville states that these five women were accounted as “sanctified and consecrated to the Spirit.” They were led through a ceremony extending over eight days and then robed in white mantles.²⁵

²⁴ Penicaut merely observes, “It is an honor for their relatives.”

²⁵ The women possibly had risen in rank. Tonti on an earlier visit had noted in the king's cabin sixty old men, dressed in white robes, howling before the king until the king bade them stop, and these sixty old men I presume were more likely to be the assembled nobility of the nation than an assemblage of medicine men. Note the Natchez name “White Woman,” and the Great Sun's reference to “White Earth,”

The only other North American region which affords strictly comparable data is Florida. Among the Timucua a couple's first-born son is ceremoniously "offered up" to the king; the mother *and six relatives* perform the ceremony, while a master of ceremonies completes it by slaying the child.²⁶

Sanctity to be derived from mere participation in the mortuary ceremonies of a chief is suggested by Velasco's note on the Tocabago. The chief's skeleton is buried; "then they say that all who have participated in the ceremonies gain indulgences."²⁷

THE COMPONENTS OF THE HONORED CLASS

The Honored Men of the Natchez is now seen to be *a class composed of three elements*; children (male, and female no doubt) of male Nobles (and probably children of female Nobles six degrees remove from a White Woman ancestress); Stinkards, and their wives, who have become raised in rank through service of a religious nature to the state; and Stinkards (and probably their wives) who have raised themselves to a given rank in the War

here meaning, it would seem, mother earth rather than the village so called. The Taensa king dressed in white. White, however was with the Creeks the color of the robes of the apprentices of the tribal medicine-priest; and the fans used to brush the path of the Taensa king "as if to chase away the evil spirits" were white. White was furthermore the symbol of peace in the ceremonial peace-war dichotomy of both Natchez and Creeks; the war color being red. Red is reported among the Natchez further as being a symbol of the executioner, and with it black is in some way associated. (Note however the red feathers in the crown of the Natchez king.) (See Le Moyne, in Swanton, J. R.: "Early History of the Creek Indians," Bureau of American Ethnology, Bull. 1922, p. 382; De Velasco, *ibid.*, p. 374. Also in Swanton, 1911. Tonti, p. 260, Du Pratz, p. 146, 148; Penicaut, p. 140.) The Timucua executioner wielded a club, presumably used for execution. The Taensa babes were strangled, but adults were put to death in the ceremonies with a "tomahawk." Natchez babes and adults were strangled, but one of the eight relatives of an adult "bore a war club as if to strike, and often he seemed to do so," in the course of the funeral procession. (Cf. Du Pratz, p. 145, De Montigny, p. 265; and the De Soto narratives cited in Swanton, 1911, p. 258).

Be it noted, in addition, that Natchez executions were not so coldly brutal as the electric chair and other executions of "civilized" Europeans. The Natchez victim was given first five or six balls of pounded tobacco to swallow "in order to stupefy him" with water to make easier the swallowing. (Du Pratz, p. 146, Le Petite, p. 142.)

²⁶ Le Moyne, in Swanton, 1922, p. 382. Dr. Swanton notes the resemblance to Natchez practice.

²⁷ In Swanton, 1922, p. 374.

organization, probably that of the Ordinary warriors. These component elements may be considered, again, as degraded descendants of Nobles, and elevated Stinkards. Since the Stinkards elevated are all, or, presumably, nearly all, already married, the Honored class will then be seen to be one in which *the matter of class exogamy does not apply at least to a very considerable part of its membership*. There may, moreover, be significance in Penicaut's evident overlooking of the Honored class in his discussion of the "nobility." The Honored class would indeed seem to be a class of a different nature from those essentially aristocratic and hereditary.²⁸ The fusion of elements suggests possibly *a welding of disparate schemes of social organization* in the Natchez pattern. Note the provision, for instance, permitting reascent to the class of Nobles of an Honored Man of Noble extraction by reason of war prowess. Such a break in the hereditary character of the Noble class suggests contagion from or imitation of a different social scheme,—that which is typified by the warrior grades. It must remain purely hypothetical, but it is clearly possible, especially in view of Dr. Swanton's conclusion that the Natchez language represents a fusion of Tunican and Muskhogean elements,²⁹ that we have in Natchez political organization an imperfect adaptation of the disparate structures of two separate tribal groups or fragments of such groups. We recall the many fusions of tribes which took place historically in the southeast and elsewhere, and the fact that at least four of the nine or eleven villages of the Natchez nation were villages of adopted Tioux and Koroa (Tunican). One group might have contributed the warrior-grade type of organization; the second, the aristocracy of two grades. The Honored Class then might be the result of adaptation as already suggested, serving to introduce a further break in the fall of the scions of male aristocrats and even affecting the once purely

²⁸ The fact that Suns might not marry any of the Honored group, is adequately explained perhaps by the fact that to become one of that group gave one exemption from liability to mortuary immolation,—the spouse of a Sun being strangled on the Sun's death. (Cf. *supra*, p. 221).

²⁹ Swanton, *op. cit.*, 1919.

hereditary aristocracy of the Noble class. Such is further suggested perhaps in the contrast between the apparently perfect centralization of the civil organization with its autocratic control and the elements of decentralization in the war organization,—in which, however, the presence of the hereditary aristocracy of the civil organization has made itself felt. Note also the striking fact *that the Great War Chief is brother to the king*, while there appears also to exist another head war chief outside the peculiarly civil part of the state organization.³⁰

PSYCHIC CONTENT AND STRUCTURAL EVOLUTION

It is the problem of the civil organization itself, however, which holds the greatest sociological interest, both because of its uniqueness of structure and the consequent psychological solution demanded. The especial uniqueness of the caste exogamy of the Suns lies in the fact that it was obligatory. The White Woman herself has left us a conversation which shows how unbreakable and without exception was the custom.³¹ “Le femme Grande

³⁰ Compare the suggestion of comparable synthesis for Yuchi social organization in Mac Leod, W. C.: “On the Significance of Matrilineal Chiefship,” *Am. An.* 1923, p. 501, n. 12. There is no evidence in the Yuchi data however for other than synthesis through imitation.

On all the above see the appendix to this paper on the Floridan origin of the original Natchez group.

The Honored Class of the Natchez might bear comparison to the Legion of Honor of the French. If younger children of French nobles lost rank as do those of the English nobility, their fall into the ranks of the mob might have been broken by awarding them the red ribbon; or they might have been provided also with a title such as that of Knight among the English which for one generation would keep them above the commoners.

³¹ Translated in the abridged and rearranged English edition as the *wife* of the king, plainly an erroneous translation. If she were the wife, her brothers would be Stinkards. And it is only the mother or the sister of the king who could say as she does “I am too old to have children who could succeed my brothers [presumably the reference being to the possibility of grandchildren through her only daughter]; and it would be indeed regretful (*beaucoup de valeur*) that our family should become extinct. There are only two young Suns who could succeed my brothers, for the third has one leg off and it is necessary to be without blemish to speak to and to be obeyed by the warriors and by the nation as a whole.” Du Pratz has not recorded the date. Her age might suggest that she was the sister of the king who died in 1728. This king’s brother, Tattooed Serpent, Great War Chief, died in 1725. Possibly the conversation is during the time of Du Pratz’s residence as a neighbor of the Natchez, 1718-1726, rather than dur-

Soleille," says Du Pratz, visited him one day accompanied by her only daughter, of fourteen years,—heir to her rank, and destined, therefore to be the mother of a king, but also to espouse a Stinkard husband. Du Pratz states that he remained puzzled at the purport of her offer, but that is quite evident from her remarks. She tells Du Pratz that she recognizes the superiority of French institutions,—especially it seems, the endogamy of the nobility of the *ancienne régime*, and the absence of mortuary sacrifices. She says her three brothers agree with her in her distaste for Natchez customs applying to the nobility,—but asks Du Pratz several separate times to keep silent concerning her heretical thoughts and to mention them to her brothers only in case they should first speak to him.³² She hopes that by having Du Pratz become the husband of the future White Woman and father therefore of the future king that he will become an agent to break the custom of the Natchez, which obliged the strangling of the husband of royal women. Without some such foreign source of

ing his later stay at New Orleans, 1726-1734. This White Woman refers to her *three* brothers. We could then account them, besides the two mentioned, also the old chief of the Flour Village. Whether by her family she means her immediate descendants, or the Suns as a whole is not clear; her expression of regret seems to be impersonal however. If there were other Sun women the royal line would be continued satisfactorily to the Natchez race. There is the fact, however, that after the deaths of the two old Suns (and apparently of their brother the old Flour Chief) there remained to the state a royal heir to the king with two brothers, those who were enslaved at the destruction of the Natchez and with their brother-in-law,—perhaps the husband at last found for the young daughter offered Du Pratz,—were taken away "with all of that family;" their aged mother being Tattooed Arm. (Charlevoix, (1731) pp. 245, 247.)

Stiggins a century later stated that the Natchez who joined the Creeks were headed by some of the royal family, but Stiggins was unacquainted with the details of older Natchez history. (See citations in Swanton, 1922). Other data may at least be interesting. In 1716 as an embassy to the French there came the king, the war chief, and a third brother; there was also "the high priest of the temple," and perhaps another Sun there; also seven village chiefs. "The Bearded, a Sun of the royal family was absent, as was the chief of White Earth (village) who may have been a Sun. In 1723-24 the French took the scalp of a Sun; also the head of Old Hair, chief of White Apple (village) was sent to the French by the Great War Chief. 1699 and 1700 were both years which had seen the death of kings.

³² If she were really the sister of the aged king who died in 1728 she may well be lying,—and her conversation suggests that she was. Certainly at the 1725 funeral of Tattooed Serpent the king and the Sun of the Flour Village were much concerned that the mortuary strangulations should proceed in accord with Natchez custom.

innovation she says, "Natchez customs will remain adamantine." She continues: "You have heard what I have said; my brothers have said the same; you understand why for the present we keep these words locked in our hearts lest the wind carry them abroad. We see that our customs are bad; but how change them? how stop their course? To such an end it is necessary that some Sun or some Noble marry some Sun Woman who may also wish to marry him; but our young Suns lack spirit enough to come to a realization of all this [*pour entendre raison sur cette importante affaire*], and even less spirit to initiate the change; [*il n'y a plus de femme Soleille pour s'y opposer que celle-ci qui y consent volontiers, pourvu que tu devienne son mari;*] because you would have the protection of the French; and you would have a spirit firm enough to effect the change." Again repeating her request for the intervention of Du Pratz through the proposed marriage she observes that "our Suns lack the will to force obedience from the Nobles, who would not fail to oppose this new custom [*le parole assez forte pour se faire abeir des Nobles, qui ne manqueroient pas de s'opposer a cette nouvelle coutume.*]" (Here again we could wish for more data on the Nobles.) Du Pratz, who sagely observes that "long since I have through experience learned that there is nothing more to be feared than a woman scorned," felt that her request was not alone distasteful to him, but perhaps dangerous, declined her offer, warning her against making it to some less wise Frenchman who, in accepting it might expose the French post near the Natchez to some serious danger [*a quelque evenment funeste.*].³³

Whether her royal brothers fully agreed with her upon the necessity of attempting a change it is certain that,—perhaps as a result of French contagion,—the Sun males felt ashamed of the fact that their progeny, unlike the progeny of French nobles, was destined to fall into the Stinkard class. Du Pratz, recounting the fall to the Stinkard class of progeny of these male Suns, observes; "Hence it happens, on account of their long lives—for these people often see the fourth generation—that it is a very common thing for a Sun to see his posterity lost among the

³³ Le Page Du Pratz, "*Histoire de la Louisianne*," Paris, 1758, v. 2, p. 35 seq.

common people." And in a footnote adds: "The Suns conceal this degradation of their descendants with so much care that they never suffer strangers to be taught about it. They do not wish anyone to recognize them as being of their race [line; family] neither that they themselves boast of it nor that their people speak about it among themselves. It is much when the grandfathers say that such an one is dear to them." (pp. 106; 106, n. 1.)

A full interpretation of this situation calls immediately for a consideration of the problem of its genesis. We have already suggested that the Sun group might be a mother-sib of reduced numbers. If such were the case the exogamy of the group is immediately comprehensible. There is, however, neither positive nor negative evidence of any significance, as to the existence of the sib among the Natchez in historic times. No comparable data, moreover, gives encouragement to this supposition. With the Creek, Yuchi, Tsimshian, and other cultures where sibs tend to rank one another markedly, there is always a family within the sib which is the ranking family. In such cultures the tendency is for the ranking families of the different sibs to form an aristocratic caste which cuts, so to speak, horizontally, across the vertical lines of the sibs.

Further, we have indicated the possibility, or probability, that the Sun group was merely the matrilineal royal family.

Such matrilineal family, might again be one of several families within a sib, in which case it would have an exogamy derived from its existence within the sib. Within the same sib in such case there would very likely be representatives of other social strata, perhaps including Stinkards, in which latter case it would not be any Stinkard at all which a Sun could marry.

Whether the Suns were a family within a sib or not in historic times, we may note the thesis elsewhere proposed that a matrilineal reckoning of blood and office for a royal family could not have been brought about unless that family were, in its earlier periods of development at least, a family within a mother-sib. Either it evolved in a continuous culture or else its preëminence was at least in part due to the superposition of the group it was a part of upon some other group by either violence (conquest) or

peaceable accommodation.³⁴ It then would be concluded that the Suns were at one time a family within a sib whether or not the sib existed with the historic Natchez, the exogamy of their Suns might in part at least be attributed to the exogamy of an original sib membership. If there were Nobles comprised within this unilateral family, as is indicated by Penicaut's observation, they would be exogamous in the same way as their Sun sib-mates; the Nobles who were children of male Suns, however, would be of the sib of their mothers and eligible therefore for marriage with any members of the Sun group not within prohibited degrees of blood relationship. With the historical Natchez these degrees included "cousins and the issues of own cousins," three degrees, and there would certainly at least be the possibility of inter-marriage in the Noble group. It would be well here if we could have available something of an explanation of the source of the practice of giving Noble rank to the children of Stinkard mothers among a people with a matrilineal reckoning for the blood and rank of their royal group.³⁵ It may be that with the progressive evolution of aristocracy, Noble status was invented for the sons of royal males; or, once already devised for the remoter members of the ruling family, awarded to the sons of the royal males, the sib-derived exogamy of the original aristocracy perhaps being made to appertain to the new Noble element also.

Another element in a possible solution of the problem of origins demands consideration. It might be suggested by comparative

³⁴ See Mac Leod, *op. cit.*, 1923, p. 506, n. 21. To the observations there made on the Natchez we may add that Penicaut (p. 140) speaks of a man's "nearest relative" as being "his eldest son," in designating the individual who strangles the husband of a noble woman on her death; this concept of "nearest relative" however is probably merely a French interpretation. Further, we observe that among the Natchez there is no mention of chiefs who might be considered sib chiefs.

³⁵ Possibly the treatment accorded the patrilineal line among the Natchez was more widely diffused in the southeast. The Conoys appear to have had a special designation for the son of a king,—the word used, however, may be merely the ordinary word for any son and not a title of distinction. But it is worth while to note that Powhatan placed several of his sons as kings over vassal tribes (Mac Leod, 1923, p. 497; 1924, p. 208).

Some attempt to indicate the genesis of the Japanese custom referred to (*supra*, p. 208) might illuminate the Natchez situation.

data from other cultures,³⁶ but it is also suggested by Du Pratz, our informant claiming to have his interpretation from native sources.³⁷ This is the attribution of the inception of the exogamy of the matrilineal royal *family* to the avoidance of marriage within the prohibited number of degrees.³⁸

The native Natchez origin myth as reported by Du Pratz explains the caste exogamy of the Suns purely on the basis of marriage avoidance, without reference to anything which might be taken to indicate the existence of the sib. The myth tells of the coming of the mythical ancestor and ancestress of the Natchez nobility to the original Natchez people who were without the blessings of a special governing class. The ancestor says; "If I have . . . male and female children, they will not be able to marry each other, being brothers and sisters, to which he added that the boy should take from among the people a girl that pleased him; that this man should be sovereign; that his sons should not even be princes, but only Nobles . . . etc.," concluding "that thus the princes and princesses should not ally themselves together, nor yet own cousins and the issues of own cousins."³⁸ In his own notes on social organization Du Pratz mentions only the forbidding of brother-sister marriages, but notes on the marriage customs by his informant on this phase of organization states that the Natchez never marry "within the third degree" (p. 98).

This explanation of the inception of the royal exogamy would be more plausible if the Natchez prohibition of marriage once extended to six degrees of relationship; but our data prevents us from doing more than noting the real possibility of this, very likely in connection with the mother-sib, as being cause of the origins of the caste exogamy.

In tracing the psychic or structural causes of the inception of an institution we are not necessarily thereby explaining the cause of its perpetuation.

³⁶ See above, p. 226.

³⁷ A native interpretation, of course, may be a mere rationalisation.

³⁸ See citation in Swanton, 1911, p. 170. The temple guardian and the king were informants of Du Pratz for different sections of the origin myth. Du Pratz seems to have been on the most intimate terms with both of them; cf. Du Pratz, "Histoire", v. 2, pp. 351-358.

We feel that Du Pratz's notes on this phase of the subject really reach to the truth of the matter,—though of course we hold no brief for Du Pratz's methodology. "At the same time that the Sun ancestor ordered the exogamy of his progeny he also gave out a law 'which does not permit any Sun to die a violent death' (p. 106). Elsewhere this is rephrased to read none 'should be put to death for any cause whatsoever, but should complete his days calmly as nature permitted him' (p. 105), the reference specifically applying, it seems, to mortuary sacrifice.³⁹

Records of actual mortuary ceremonies made by Du Pratz himself and independently by others, however, make necessary very important qualifications of Du Pratz' statement. These narratives show us that not alone Suns but also Nobles and Honored Men were free from *obligation*, at least as a general rule, to become mortuary victims which, of course, derivatively, would free them from liability to be chosen in marriage by Suns, such marriage carrying with it the obligation to become a mortuary sacrifice on the death of the royal spouse. (Cf. Du Pratz, pp. 145, 146.) Whether Stinkards, aside from those married to royalty and those who were in infancy chosen to be life-long servants or slaves of royalty, were exempt from the liability to be ordered to die or to sacrifice their infants at the bier of a dead king is uncertain; but it is clear that many of these Stinkards' sacrifices were voluntary, the main object no doubt being the ascent for themselves or relatives to the Honored Class. (Cf. Penicaut, p. 140; Charlevoix, p. 141; Gravier, p. 140. For the Taensa, Tonti, p. 267). In the narratives also we feel that the

³⁹ Note the trouble the French had to get the execution of the White Earth chief,—perhaps a Sun. But a few years later the Great War Chief sent the French the head of Old Hair, chief of the White Apple village. (We do not know definitely what was the rank of these chiefs; and the party division in the Natchez nation at the time may have had its effect in limiting the royal power in some villages in the matter of executing anti-French chiefs. Note also the fear of the Great War Chief that he might be suspected by his people of having been an accomplice in the execution by the French of the Sun, "The Bearded Chief,—and other prominent anti-French leaders. (See material in Swanton, 1911, pp. 194, 207, 200-201, 214, 219); also discussion by Dr. Swanton on the party situation, *ibid*, pp. 194, 207, 200-201, 214, 219. Cf. also the concern of the Natchez that neither the king nor his war chief brother should die in battle, with the penalty falling upon the war chiefs, *Ibid*, pp. 124-125.

joy with which the mortuary victims are reported to have been seen taking their departure may have been a ceremonial attitude in many cases. It would seem also that many or most of those who voluntarily gave their lives were aged persons, notably aged women, who had no further use for life on earth and wanted to go with splendor into the celestial paradise. But there were cases of voluntary death motivated by the purest feeling of love for the departed on the part of those whose life on earth might still be pleasant,—save for the departure of the friend or lover. In this connection the particularly significant fact is *that even Suns and Nobles might so voluntarily offer themselves; the Nobles to be strangled like any commoner, but the Suns to commit suicide in any way they chose.*⁴⁰

It is because of this obligation to die with a deceased Sun, Dumont also says, that noble women do not marry Suns;—"it so happens that the female Suns never desire to be married to the great chief, who, for that reason, is always obliged to marry Stinkard women" (p. 104); Du Pratz ironically phrases it,—that the Suns are, because of the rule forbidding them to be put to death, "under the pleasing necessity of making misalliances."

But we have noticed that a Sun might voluntarily die. What then would prevent the intermarriage of those of the nobility who were prepared from affection to make the greatest sacrifice in case of the death of husband or wife? First of all we must observe that there is a great difference in the feeling that one is to be condemned to death, perhaps at a moment's notice because, of some agreement made in a moment of some past year, and the feeling that if one chooses, he may make whatever sacrifice the

⁴⁰ Note the incidents concerning Ette-Actal (Taotal) who was once sentenced to die at the funeral of the Great War Chief "in the capacity of a relation of his (the War Chief's) wife." (Dumont, 151, 152, 154; Du Pratz, 145, 146, 240; Charlevoix, 249; cf. Swanton, 1911, p. 147, n. 1) Also the contrasting attitudes and motives of the two wives of a deceased war chief. ((Du Pratz, 145, 147, 148; Dumont, 152, 153.) And the voluntary death of the Noble woman, La Glorieuse, (Du Pratz, 145; Dumont, 151, 154.) The death also, possibly compulsory because a nurse of the deceased Sun of the Noble woman, La Mizienne. (Dumont, 152; Penicaut-Charlevoix, 141, 142.) And finally the agreement between the king and his brother that if one died the other would commit suicide, the king by shooting himself, the War Chief by stabbing himself (Dumont, 150, 154-155; Du Pratz, 150.)

impulse of the moment may call for. But love affairs are not foreign, as so many wise theorists suppose, to cultures other than the modern Euro-American. An obligation involving death upon a given occasion might be made hastily by the infatuated ones. Presumably male royalty would be the more eager to make endogamous matches for the sake of the aggrandizement of their progeny. Once such matches were introduced by some courageous king or other royalty or of the lesser nobility even, the entire cultural complex might have been made to undergo change. In Scandinavia, for example, the wife, doomed to burning at the funeral bier of her husband, sometimes found one excuse and another to avoid the death which custom decreed for her.⁴¹

The Natchez women of the nobility had through custom the assurance of a noble rank for their children. There was not for them then as for the men the great primal urge towards endogamy of caste. And love with the finer men of the nobility such as Tattooed Serpent was possible for them without the obligations of marriage. Freedom and the assurance of a future for their children was theirs. And an endogamous marriage was impossible without the assent of the woman. Then there was the doom of an involuntary death which the woman would have to accept, besides giving over the freedom and prestige which was hers. As for the husbands, probably unloved, of the noble or royal women (for as we have indicated we know little of the facts of the customs relating to Nobles), Charlevoix says: "They have a right to turn away their husbands when they please and to take others, provided there is no relationship between them." Le Petite, from the same source, writes, "*They have but one husband*, but they have the right of dismissing him whenever it pleases them and of choosing another among those of the nation, provided he has not made any other alliance among them" (pp. 102, 103). Again, Charlevoix states, "If their husbands are unfaithful to them they can order them to be knocked in the head" (Le Petite says, "to have their head cut off"), "but they are not subject to the same law themselves. They may have besides as many gallants as they

⁴¹ Williams M. W.: "Social Scandinavia in the Viking Age," N. Y., 1920, pp. 103-105.

think fit, and the husband is not to take it amiss. *This is a privilege belonging to the blood of the great chief.*" And Le Petite: "In the presence of his wife he acts with the most profound respect, never eats with her, and salutes her with howls, as is done by her servants. The only satisfaction he has is that he is freed from the necessity of laboring and has entire authority over those who serve the princess" (pp. 102-103). These husbands of the noble women were to be chosen from only among the inferior men of the nation, for any man with a minimum of warlike prowess could rise to the Honored class. We can well believe that a woman like La Glorieuse,—who presumably had a Stinkard husband,—had real affection not for her husband but for such as Tattooed Serpent, taker of forty-six scalps and Speaker for the warriors of the nation,—or for "only the most distinguished Frenchmen."

The quest of the superior male by the woman thwarted by Natchez custom no doubt had its effect on the status of the husband of noble women. But the noble men of the Natchez were quite happy with their Stinkard wives, and the wives, too, were happy and honored! Is it that the male is more satisfied with a socially and intellectually inferior mate, one with whom perhaps obligations are not met as they should be on her part? Because of the social status of the children, it would be an advantage to the Natchez nobleman to marry a noblewoman; but since the desire for aggrandizement of the children might not be satisfied, there is then nothing objectionable in the woman of the lower class. Besides, since there was because of the exogamy, no difference in blood between the nobility and the commoners of the Natchez, Stinkard women were no doubt potentially as beautiful and fine as royal women. The Natchez nobleman need not have only one wife, though there is no indication that polygamy was particularly common. The great Tattooed Serpent had but two wives, one of whom was the favorite, and she alone had children. Wives were well treated, and buried in the temple with their royal husbands. They alone, of all the inferior ranks of the nation, might eat with and meet with their royal husbands on terms of familiarity and equality. That these marriages at least frequently involved real affection there can be no doubt, to judge from the historical and other data.

It is then, primarily, in the mortuary practices of the Natchez that we find the powerful impediment of structure or custom to a development of an endogamous nobility, the tendency towards which it seems must be considered one of the primal underlying tendencies of social evolution. Even the very primitive Australians possessed endogamous nobilities. The contrast of the Natchez nobility with the strictly endogamous nobility of their "brothers" the Chitimacha, with whom marriage outside the caste for a noble meant the loss of rank, is peculiarly striking. (The Timucua also appear to have had an endogamous nobility.)⁴²

If the mortuary customs are further the explanation of the perpetuation of caste exogamy for ancient as well as recent periods, it must be assumed then that a rather early correlation or concurrence of development existed between the evolution of hereditary chiefship and the mortuary customs. This it is not difficult to believe. Note for example that the Carriers, a people indeed primitive as regards political evolution, and a people who were apparently toying with cultural novelties imitated from more advanced neighbors,—namely, the Tsimshian,—seem to present a remarkable instance of widow-burning or suttee in the course of development.⁴³ The Natchez no doubt in early periods had, moreover, the suggestion of other types of sacrifice such as have been already noted to influence the development of the custom current among them. The immolation of a widow at the death of her husband is a familiar enough feature in other cultures such as that of Scandinavia and India; the versatile Natchez seem to afford us the only example in culture history of the *obligatory immolation of the husband at the death of the wife*. This unique feature of Natchez practice would seem to suggest, in view of the social inferiority which it seems was probably universal for women in early culture history, a late development of the practice among

⁴² Howitt.: "The Native Tribes of Southeast Australia," London, 1904, pp. 295 seq., 310. Swanton, 1911, pp. 348-349. Swanton, 1922, p. 372, Le Moyne.

⁴³ Morice: "The Canadian Denes," Canadian Archeological Report, Anthropological Section, 1905, etc. Tylor considers the practice a "mitigated survival" without troubling to give his reasons for the opinion. The facts available indicate just the reverse, if they indicate anything. On this, in connection with the whole question of survivals, however, see Mac Leod, W. C., 1923, p. 516, n. 49.

the Natchez,—developing after the segregation of social strata and the exogamous caste custom; but it may well be that widower immolation with the Natchez was developed as a result of an intra-cultural imitation of the practice already followed of widow immolation.

Finally, we may see in the Honored class a civil grade developed in part through the desire for exemption from sacrifice on the part of Stinkards; and this desire may have motivated the imitation in the civil organization of the use of civil honors in grading the war organization.

Comparative Note. The exogamy,—particularly the compulsory feature of it,—of the royal family, is a trait of culture which makes the Natchez superficially more comparable to the cultures of the old rather than of the new world in this important respect. In West Africa there is an institutional complex which has spread to both Bantu and non-Bantu cultures, in part through imitation of one culture by another, in part by the migration of groups. It includes the *offices* of King's Sister and King's Mother, peculiar customs concerning the interregnum, and customs concerning the marriage of royalty to commoners. Space forbids describing and analyzing this complex here and it must be reserved for later consideration. Suffice it to say that Natchez culture to an enthusiastic diffusionist would seem certainly to have resulted in part from a migration of some group from West Africa to the West Indies and Florida. Note for example that in Ashanti the king may *permit* his sister (whose child will inherit his office) to marry some especially handsome commoner; this commoner is expected to commit suicide upon the death of his royal wife or upon the death of an only male child. This is the only example aside from Natchez practice that the writer knows of in culture-history where a husband is expected to die on the death of the wife. But this surely is mere coincidence, and we have reason to believe the natives when they say that their purpose in permitting the marriage of a royal woman to an handsome commoner is to have handsome kings;¹¹ no doubt the suicide expected of the

¹¹ Cf. Ellis, A. B.: "The T-hi-Speaking Peoples," London, 1887, pp. 212, 287.

commoner on the death of his wife or only male child is due to the fact that he can no longer fulfil the purpose of the marriage.

All the unique correspondences of law or custom between West Africa and the Natchez indeed are very readily understandable as convergences. Wherever in West Africa royalty generally marry commoners, the practice is understandable *as arising from the original observance of extensive marriage prohibition persisting through the later stages of political evolution by virtue of the development of institutional features which tend to discourage caste endogamy*, even as we have so interpreted the Natchez situation.

The improbability of other than independent development accounting for Natchez practice is further made clear by the fact that the Manchu conquerers of the Chinese, like the Natchez, have a compulsorily exogamous royalty.⁴⁵ In West Africa there seems to be no case where, if royalty meet certain requirements, they may not marry within their caste. The Manchu situation is clearly the result of the persistence of the prohibition of marriage within a wide range of blood-relationship, (which fact tends to substantiate our thesis concerning the facts of Natchez organization.)

It is hoped that, in the light of the above, Natchez political phenomena will have become less mysterious and incomprehensible, though no less interesting. The reader of course will feel the necessity for analytic study of other phases of Natchez society before relying on the above for comparative sociological purposes; the writer has considered the remarkable Allouez or "slave" guards or servitors of the Natchez, and Natchez tribute taking and taxation in another connection, where the specific problem of Natchez political organization is dealt with in connection with the general problem of political organization.⁴⁶

APPENDIX

THE FLORIDAN ORIGIN OF THE NATCHEZ TRIBE

At least one-third of the Natchez villages were of "adopted" nations of Tunican stock. Of the Tunica nation itself we unfortunately know little or

⁴⁵ Cf. Headland, H. T.: "Court Life in China," N. Y., 1909, p. 218.

⁴⁶ Mac Leod, W. C.: "The Origin of the State: The Problem Reconsidered in the Light of the Data of Aboriginal North America," Phila., 1924, pp. 24, 56, 87, 91 seq.

nothing concerning social organization. Apparently there was a head war chief under the civil chief (Cp. Charlevoix, p. 249). We hear of "the war chief" of the Tioux, one of the "adopted" Tunican groups). The historical Tunica however may have been largely borrowers from the Natchez. Lacking more information concerning the Tunica, who apparently have added of their blood and language to that of the original Natchez Muskogean stock, we can not aside from the analysis put forward above venture further on any hypothesis. Except perhaps to note the fact that Natchez culture must be considered as a westerly representative of the culture of Florida, more intimately related to the cultures of Florida than any cultures which in historic times were found intervening, a fact which may be of some significance in a later connection (See supra, p. 226). There may have been a closer continuity formerly between Florida and Mississippi, as regards the political phase of social organization, broken by intrusive Creeks and related tribes. *Or the Natchez may have been migrants from Florida.* The latter the writer considers a not incredible supposition. Dr. Swanton has indicated the possibility of linguistic affinity between the Calusa and the Choctaw or other Muskogean language; concluding however that "Putting all the above evidence together, we may fairly conclude that a connection with the Choctaw or at all events some Muskogean dialect is indicated; but we must equally admit that it is not proved." (Op. cit., 1922, p. 30). Now the Natchez possessed a peculiarly unique and original institution not discussed here,—that of the Allouez or "Guards"—for which there is *in no region save Florida any suggestion of a strictly comparable institution, and it is the Calusa who afford that data*, data which indicates practically conclusively that a like institution or its basic practices obtained there. (Cp. Lopez de Velasco in Swanton, 1922, p. 389). In important customs however historic Natchez and Calusa differed radically. (Cf. *ibid*, p. 388). The correspondence noted however in such a unique custom would suggest possibly a closer cultural bond between Calusa and Natchez than between Natchez and Timucua. The Timucua on the other hand appear to be nearer the Creeks; and appear to have practices which would place a gulf between them and the Natchez. The Timucua for example had an endogamous nobility. Cross-cousin marriage Dr. Swanton suggests as a possible fact. Cross-cousin marriage would explain why, which seems to have been the case, *inheritance was reported as being matrilineal, yet the kings' sons inherited their "property and power"* (but only children of the first wife being considered eligible). Timucua chiefs were buried, without human victims; priests were buried within their houses (recalling Creek practices); while Calusa chiefs and royal women had human victims; Calusa burial practices moreover are akin to those of the Natchez-Choctaw type in contrast to the Creeks and Timucua. (Cf. data in Swanton, 1922, pp. 373-374, 368, 369, 371, 368, and Dr. Swanton's criticism of the data, pp. 370-371). *The Calusa*, it may be noted, *extended out onto the Florida keys, in intimate contact with the West Indian Arawaks*; the Timucua were in northern Florida, near the Creeks and the Eastern Sioux.

As concerns the possibility of a migration within historic times we have nothing but the Natchez migration myth to fall back upon, and a tradition is

notably an unreliable record. But the Natchez tradition, as noted by Dr. Swanton in 1911, very clearly contains some actual historical reminiscence and in this is better material than most such. From what we know of the bibulous habits of the Indian, including the Natchez kings, I believe that when the temple guardian *pointed* to the west in reply to Du Pratz question as to whence they came, and Du Pratz, in his plantation cabin, looked at his compass, either one or the other may have made a mistake. That the direction meant to be indicated was east is indicated by the fact that later, not pointing, but describing, the informant said that the Natchez lived formerly "under the sun"; Du Pratz had originally asked where the Natchez had lived before coming to the Mississippi; this time he insisted on knowing what was the ultimate origin of the people; but the informant insisted that the tradition explained only their place of residence before migrating to the Mississippi; that although they were migrants into the land they lived in formerly they did not know whence they had come into it; *but that to reach the Mississippi* they "followed the sun and came with it *from where it rises*." It may well be that the Natchez were one of those people who have no tribal origin myth, and that the narrative given Du Pratz is an oral record of events as remembered transpiring within historic times. This interpretation differs from that tentatively offered by Dr. Swanton in his 1911 volume; but it serves indirectly towards confirmation of Swanton's identification of the Guaychoa of Elvas with the historic Taensa, in that it offers some reason why there is no note of the Natchez below the Taensa in the time of De Soto. (Note also that Elvas reports that the chief of Guaychoa ordered the heads of mortuary victims for the dead De Soto to be "struck off," while La Source and Montigny report for the Taensa that their victims are executed with the tomahawk.) The body of the tradition in every way, once the contradiction of directions is cleared, suggests Florida; the large stone houses alone offer a difficulty; but we recall the communal dwellings reported from Florida; or it may be we have here a reminiscence of information received by the departed Natchez about the stone churches of the *doctrinas*. On the basis of the tradition, moreover,—the question of worth or worthlessness of course remaining,—the separation of Taensa and Natchez is readily comprehended.

Finally, we may note the absence of reference in the data of the Florida cultures to any distinction of peace and war chiefs; and the accounts of military affairs suggest that the omission perhaps is not to be explained by the deficiency of data; the civil chief appears as the war chief also. Possibly the Natchez situation described above concerning this peace-war distinction is really, as above suggested, something which was absent from the culture of the group superposed on an aboriginal group. (Floridan-Muskhogan, say, superposed upon Tunican).

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HAWAIIAN CUSTOMS AND BELIEFS RELATING TO BIRTH AND INFANCY

BY LAURA C. GREEN AND MARTHA W. BECKWITH

MOST of the material for this paper was collected by Miss Laura Green of Honolulu from an educated Hawaiian young woman, Mrs. Mary Pukui, whose father is an American from Salem, Massachusetts, and whose mother is the child of a Samoan father and a native Hawaiian mother brought up in the district of Kau, Hawaii. Miss Green is of missionary descent and has spoken the Hawaiian language from childhood. Although some references are made to accounts of ancient belief, there is no attempt made here to offer a complete study of old Hawaiian custom. Mrs. Pukui has related those customs and beliefs which are a part of Hawaiian lore to-day and with which she has come in contact in her own experience.

The main authorities cited on these subjects are the *Fornander Collection of Hawaiian Antiquities and Folk-lore* edited by Mr. Thomas Thrum and published by the Bishop Museum of Honolulu in 1916-1919; David Malo's *Hawaiian Antiquities*, translated by Dr. N. B. Emerson, 1898, and edited by Dr. W. P. Alexander; Ellis's *Polynesian Researches*, second edition, London, 1832, and *Narrative of a Tour through Hawaii*, London, 1826. Haleole's romance of *Laieikawai*, translated in the 33rd Annual Report of the Bureau of American Ethnology, Washington, 1919, is a mine of information in regard to old folk custom.

BELIEFS ABOUT PREGNANCY

A very detailed folk-lore prescribes minutely for the future disposition, appearance, and health of the child as established by the mother during pregnancy, especially in regard to her craving for particular kinds of food. In some cases, the observance of taboos will avert the chance of evil. If an expectant mother finds the thread knotting or kinking as she sews, she must smooth out the thread quickly lest the child at birth should be strangled in

its own navel-cord. She should not sit in the middle of the doorway lest she be struck on the back of the head (by a spirit) and the child be killed. She should not string or salt fish, for if the fish should spoil, the child would be cursed with catarrh.¹

Should an expectant mother have a particular longing to see one of her friends, that friend will be specially loved by the child. Such a longing is called *kau-na-maka*, "rest the eyes." If it is impossible for the friend to appear, a relative must take a smooth stone, place it in the center of the doorway and call out, "Here is so-and-so!" The mother will be immediately comforted. Mrs. Pukui has herself seen this little ceremony.

Should a woman become ill during pregnancy, her child will have a mean nature. If she is troubled with constant nausea, he will not provide for her. Whatever special food she desires a few days before the child's birth will be the child's favorite dish. The kind of food she craves determines some special characteristic of the child. If she desires *palani* (the "surgeon fish" which emits a rank odor) the child will have a foul-smelling skin and any fish that he may catch will also have a bad odor. If she wants *kole* (a brown fish with red eyes), the child will have pretty sparkling eyes. If she desires *aholehole* (silver fish) or *manini* (a kind of coral-reef fish),² the child will be shy; if *opihi* (a bivalve that clings tight to the rock), he will be affectionate; when he loves a person, nothing but death can separate him. If she craves *wana* (sea-urchin), he will be silent and harmless if let alone, but if disturbed he will seek to do harm; if *o-opu-poo-paa* (literally "hard-headed" gobey), the child will be obstinate; if

¹ Fornander (*Collection*, 3:2) describes the taboos which a pregnant woman must observe. "She must not eat fish salted by others; she must not eat white-fish, the *at'u*, the *opelu*, or the mullet. She must not eat a brown-colored dog; she must not gird herself with a glittering skirt (*pa-u*). She was not to wear old garments; she was not to dwell in an old house; that was strictly forbidden."

Taboos were also enforced upon the child, who was "not to eat out of any old vessel which formerly contained anything filthy," and upon those who had care of the child, who were forbidden to eat "pig or cocoanut, or any unclean or filthy food," nor must their garments be greasy with such food. Death was the penalty for those who broke the taboo in waiting upon the child. These taboos were observed only for the children of high chiefs.

² In Haleole's Hawaiian romance of Laieikawai it is the spawn of the *manini* that Laieikawai's mother sends her husband to fish for just before the birth of the twins.

hilu (a fish found in the coral-reef), this is a good omen for the child will be one of few words, quiet and industrious. If the mother craves mullet, the child will wander just where he pleases, like a full-grown mullet; if *opae* (shrimp), the child will have a somewhat wandering disposition, but will never go very far from home. *Pana'u e like me ka opae*, "Restless as a shrimp," is the saying. If the mother desires wild duck, the child will have a roving wild nature. If she desires some other bird, he will be a wanderer going from place to place, establishing a home and abandoning it to go elsewhere to make another. If she wishes a cock, he will be a good chanter. *Lea' i ke oli*, "Pleasure in chanting," is the saying. If she craves dog, the child will be a quarrelsome person, lazy, dirty, and gluttonous. If she wishes *luau* (taro-tops cooked like greens), the child will have a pleasant quiet disposition and answer questions only by nodding or shaking the head like the swaying of the taro-leaf. If she wants sour fruit, the child will have a sour disposition; if some sweet and some sour fruit, he will be sometimes cross, but quickly forgive and forget and become happy and sunny in disposition.

The locality from which the desired food is to be obtained also marks the child's nature. If the fish the mother longs for comes from the deep sea, the child will be of a roving nature—perchance leave home for good. If the fish lives near the shore, he may roam but will always return. If she craves land food, he will remain always at home.

Birthmarks may be determined in color and shape by the kind of food the mother craves before the child's birth. A craving for *moi* (fish of the thread-fin family), causes a white mark; that for *humuhumu-nukunuku-a-puaa* (a species of trigger-fish), a black mark; that for *ohia* (mountain apple), a red mark; and for yam, a large dark-brown spot. The craving for *okele* (a sea-creature resembling a sea anemone), leaves a mark resembling an anemone; that for shark leaves one like a small brown shark.

The sex of a child may be foretold before it is born by asking the mother for her hand.³ If she gives it palm up, she will have

³ Cf. Haleole's romance of Laieikawai, chapter 1, where the expectant mother gives "her left hand with the palm upward" and is told she will have a daughter.

a daughter; if palm down, a son. If she gives both hands she will have twins, their sex to be determined by the position of the palms. A young woman from Hana district on the island of Maui told me that the practise was a common one among the older people of her district.

BIRTH⁴

So far as reported, the only presage which heralds a birth in a commoner's family is the cry of the night-bird called *ewaewaiki*, which tells of the birth of a child in the neighborhood. For a chief there are signs in the heavens.⁵

If a child at birth faces toward the door, he will be a provider for outsiders, not for his own family. If he turns to any relative, that person will be the child's favorite.

BIRTHMARKS⁶

The position of birthmarks, called *ila*, on the child's body is indicative of his nature in mature life. A child born with a

⁴ In old days, special care was taken that the first-born of a high chief should be born in a peculiarly sacred spot. Such a place was Kukaniloko in the uplands of Wahiawa on the island of Oahu. See *33rd Annual Report of the Bureau of American Ethnology*, page 339 and references in the footnote, for a description of this place and of the ceremony prescribed at the birth of the royal child.

Fornander (*Collection*, 3:110) names a special priest whose duty it was to examine with his hands the bones and arteries of the child and see if anything was out of place in order to set it right at once "Lest it grow upon him to develop when he becomes a man grown." Old Hawaiians are very skillful in such manipulation. Ellis (*Polynesian Researches*, 1:261) describes the practise in some parts of Polynesia of shaping a boy's head with the hands so as to give him a war-like appearance.

⁵ Fornander (*Collection* 3:108), says, "These signs, such as the clapping of thunder, the flashings of lightning, and the rain and wind on the ocean were all signs of royalty and pertained either to a dying chief, a travelling chief, or the birth of a chief." Stories about Kaméhaméha the Great represent him as born during a night of violent thunder-storm. A double clap of thunder heralded the birth of the twins in Haleole's romance (chapter 1) and a rainbow arched over the place in which Laieikawai was hidden. So in Fornander's story of *Kihapilani* the rank of the chief is revealed by the presence of rainbows. Rain is regarded as a symbol of wealth in Hawaiian ceremonial, and a rainfall on a night of prayer is therefore of good augury (Malo, 208-209).

⁶ See Fornander (*Collection*, 3:134-138). According to Fornander, the following characteristics accompany moles on particular parts of the body:

Feet (instep)—lazy and unsettled.

birthmark on his abdomen will be of mean disposition, that is, *opu ino*, "bad-bellied"; if on the chest, he will be kind; if on the feet or legs, he will be a great traveler; if on the thigh, he will like to sleep with his leg thrown about a pillow, called *hoouka*. A mark on the shoulder denotes a burden-bearer; on the hand, a worker; on the palm, a thief; on the neck, a fondness for wearing wreaths. If a mark is on the mouth, he will be a gossip; if on the ears, an eaves-dropper; if on the eyes, critical or *maka loi*, "disapproving eyes." If the mark is on the forehead he will become learned.

THE AFTERBIRTH

Special care must be given to the disposition of the afterbirth and the navel cord of a child at birth. The afterbirth must be thoroughly washed in order that the child may not suffer from sore eyes, and then buried.

After burying the afterbirth, a tree was in old days planted over the spot and on no account was it to be cut down as long as the child lived. Mrs. Pukui knew a woman on Hawaii who had a row of trees of uneven height in her garden to which she would point one after the other and say, "Why yes, that one is Irene, that Agnes and that Elijah."

To insure bright-looking eyes to a girl, the parents would hide the afterbirth in the hollow of a young pandanus "to sharpen

Feet (top)—lazy and wandering, but in less degree.

Leg (below knee)—itinerant, but not unstable.

Leg (above knee)—itinerant but a worker.

Privates—lascivious.

Back—selfish and inconsiderate.

Neck (back)—strong to lift burdens.

Neck (throat)—gluttonous.

Nose—"a kissing mole."

Forehead—attentive and resolute.

Crown—learned.

Wrist-bone—a good wrestler.

Lip—a tale-bearer.

Palm—a thief.

Eye-brows—ill-natured and selfish.

Fornander (*ibid*, 138-142) reports the signs which determine a child's characteristics according to the month in which he is born.

the eye-lashes,"—*i'ooi na lihilihi maka*. Just as the tree has sharp thorns, so the eye-lashes and eye-brows will become sharper and give the eye a bright sharp look.

Many stories occur in which an afterbirth or abortive child is thrown into the water and becomes a family guardian spirit in animal form.⁷

THE NAVEL-CORD

The same care surrounds the umbilical cord. The ancient ceremony of cutting the navel-cord of a child of high rank is described by Fornander.⁸ When the blood flows the priest declares, "This is a rich child!" In the highly poetical song of the birth of the Hawaiian islands quoted by Fornander⁹ and doubtless referring to the families of chiefs who ruled over them, the small rock island of Molokini is called "the navel-string" from the island of Kahoolawe, which was "born a foundling." The high chief Uluhina, whose function it was to cut the navel-string of new-born babes, is represented as cutting the navel-cord for this foundling and wearing it with the afterbirth as a loin-cloth. Afterwards he throws it away into the water and there is born out of it the little rock island of Molokini which hugs Kahoolawe so closely. In Haleole's romance of *Laieikawai*, the old great uncle who saves the life of the twin sister Laielohelohe, wears her navel-cord about his neck to keep it from harm. Again, in the legend of *Lonoikamakahiki*¹⁰ the young chief asks his retainers, "If my navel-string is yet in your keeping, then tie it together with my father's bundle of war-spears." That is, he wishes it put away with those things which he has singled out as precious from his father's treasure-house.

The preservation of the navel-cord is still regarded as an important charge upon the parents or guardians of a child until it can be deposited in some sacred or safe spot especially reserved for such disposition. Should it chance to be eaten by a rat, the child will become a chronic thief.

Mr. Joseph Emerson writes as follows: "It is the custom of

⁷ Cf. *American Anthropologist*, n. s., 19:504.

⁸ Fornander *Collection*, 3:6.

⁹ *Ibid*, 1:4,8.

¹⁰ *Ibid*, 1:258.

Hawaiian parents to pay great attention to the umbilical cord which is detached from a young infant. The *piko*, as they call it, is salted and wrapped up in a piece of *tapa* (native bark cloth) or put in a bottle and carefully preserved among the treasures. When a suitable occasion offers, perhaps many years after the birth of the child, the *piko* is taken by (the child's) parents to its final resting-place and deposited in as secure a manner as possible. . . . in order to prevent its being eaten or gnawed by rats or mice; for (should this happen) its owner will grow up a thief and a worthless character. *Pau piko i ka iole* ("Navel-cord gone to the rats") is a form of reproach that no Hawaiian will tolerate. On Molokai, a favorite place of deposit is in the sand at the base of Kalapapa cliff, at a spot known as *Ka-piko-one*, "The sand of the navel-cord." At Hilo, Hawaii, the place of deposit is in the Wailama river at its deepest point. The *piko* is first securely placed in a hole in a small stone (before being cast into the water). In Puna, Hawaii, famous for its cocoanut and *hala* trees, it is common to plant a young cocoanut and bury the *piko* under it or to secrete the same among the upper leaves of the *hala* tree where the prickles would effectually check the approach of rats. At Honomolino landing in South Kona, Hawaii, there is a rock of legendary interest which, though it rather obstructs the approach of boats to the landing, the natives say nothing can remove. At very low tide it appears at the surface of the water. Thither anxious parents seeking the welfare of their offspring are wont to come from all parts of South Kona to secrete the *piko*. A hole is made or found in the rock, through which the *piko* is thrust. A small stone is then rammed in solidly to close the opening."

On July 1st, 1914, I visited two sacred rocks in Puna district on the island of Hawaii which are used for the depositing of the navel string by old Hawaiians in the vicinity. These rocks lie on the northern and southern boundary lines of the division (*ah-upuaa*) of land called Apuki. They are in the form of great smooth lava mounds of the formation called *pahoehoe*. The rocks themselves are pictured with cup-shaped hollows cut into the smooth surface, some with rings cut about them, some with two rings. All about in the smooth lava surface surrounding the mound are

pictographs of a more or less complicated kind. This is especially true of the mound on the north, called Puuloa. The other mound is called Puumanawalei, or "Hill of the bringing of the people together with rejoicing," and has very few markings. Puuloa means "Long hill," a name which may have in it some indication of sacredness to the gods. My informant was a native Hawaiian named Konanui, but not a very reliable fellow. He explained the markings as follows. The cups were made as a depository for the navel cord. A single cup was made for each child. Cups with rings about them were made for a first-born; with two rings for the first-born of a chief (*alii*). In some instances a number of cups were encircled with a single ring; this he said represented a family group, probably of a chief. Some of the pictures in the lava about the mound represented a *moo* or lizard, some a shark, some a *pulolu* or taboo signal in the shape of a round ball on the point of a staff, some "gods." One picture in the form of a cross, Konanui said, depicted the signal borne before a chief when he was traveling. Men bear the two ends, where calabashes are hung containing provisions; a torch is fastened to one bar; on the upright is fastened a *ka-lai-pahoa* or fetish object. When men traveled about the island, they camped at this place and drew the pictures here represented.

I give Konanui's explanations for what they are worth. He certainly did regard the markings with reverence, for when I began to chalk them before photographing I saw him give a start as if he thought I was about to disturb them in some way. This reverence was evidently stronger for the cup-markings on the mound than for the pictographs about it. I believe his explanation of the pictographs is probably correct, for in old days men traveled about the island once a year to collect the imposts and this point just on the borderline of a land division was a likely enough place for a camp. But the fact that the cup-markings on the rock are now used for the depositing of the navel-cord is not proof that they were originally cut for this purpose.¹¹

¹¹ Ellis, *Narrative of a Tour through Hawaii* (1823) in his appendix upon the *Hawaiian Language*, reports seeing along the southern coast "a number of straight lines, semi-circles, or concentric rings, with some rude imitations of the human figure

That they are still so used I was assured by my native Hawaiian hostess at Kalapana, born in Kamoamoa in 1862. For each of his fifteen children her father had made the journey to Puuloa and deposited the navel-cord. The method is to lay the cord in the hole and place a stone over the opening. The party camps overnight and when the stone is removed in the morning the cord has vanished. Since the loose lava-rock of this section swarms with insect scavengers, it is not necessary to attribute the supposed action of the gods to any special miracle.

HAIR TABOO¹²

If the parents are told in a dream not to cut a child's hair, that child has a very sacred head from the gods, called *poo kapu loa*, and to ignore the warning would bring disaster.

There is a general belief that to cut the hair, except to clip the ends, is unlucky.

A girl's hair was always well cared for and remained long until the time of marriage, when it was bobbed and the braid left with either her own or her adopted parents, called *kahu hanai*. The cutting of the hair signified the severing of the ties which held the girl to her parents. The braid became a keepsake and was often twisted into a cord for the *lei palaoa* or hair necklace, a number of woven strands of which were worn about the neck attached to a polished whale-tooth ornament as a sign of the rank of a chief.

NAMING CUSTOMS¹³

In old times no family name was given to a child. "Each child was born individually," says Mrs. Pukui. But to-day it is more common to give such. Nor is there any sex difference in names, according to Mrs. Pukui; names are given interchangeably to a girl or to a boy. Nevertheless in the romance of Laieikawai it is to be observed that most of the women bear names of plants

carved in the compact rocks of lava," which were ascribed to former travellers. The dots or marks in the center were explained as men; the circles denoting a journey completely around the island. Cf. Stokes, *Hawaiian Petroglyphs*, Bishop Museum Honolulu.

¹² Cf. Emerson's note (8), Malo, 185.

¹³ The subject of the name-song which is composed at the birth of a child of rank is not treated in this paper.

while the men bear such as indicate rank or prowess. It is possible that this is Haleole's own device.

Any one of a number of considerations may determine a child's name. Relatives or friends often name a "favorite child" after their own name and such children are referred to as "*kuu inoa*," or "my name." Hawaiians are apt to confer a fancy name or a family name of their own upon a white person whom they love.

A name is often given to a child to commemorate an event which happened at or about the time of its birth. One of the young men who, early in the history of white influence in the islands, went to New England in a whaler and was later found weeping on the steps of Yale College because of his compassion for his nation steeped in paganism, was named Opu-kaha-ia, that is, "Abdomen-cut-open," probably because a chiefess in that vicinity was unable to bear a child in the regular way, and this boy was named for that event. In those days priests performed a sort of cæsarian operation with a piece of sharpened bamboo.

Hawaiian children sometimes receive names with an offensive meaning. Sometimes such a name is chosen as a protection for the infant, just as adoption is practised for the same reason. If, despite the best of care a number of children die in a family, it is believed that a *uhane kuewa* or "wandering spirit" has snatched away the children. In order to save the next child by making him appear disgusting to the spirit, the child is given an offensive name, such as *Pilau* (stench), *Pupuka* (ugly or worthless), *Kukae* (excrement), or *Kukae-kahiko* (old excrement) and *Kukae-maloo* (dry excrement). Ku-kahiko, the wife of the high chief Laa-nui, was a woman of low birth. Her name was originally *Kukae-kahiko*, but when she married into the nobility she changed her name to Ku-kahiko. Hence the riddle "*Kahiko hoi oe, aone ou nui ae*," "Ancient you are but still you are small," although it puns on the word *kahiko* (ancient) and *ku* (indicating retarded growth), also glances satirically at the woman's humble birth.

There is another reason for giving a child an offensive name. If a person has been given a bad name by one who is angry with her she will pass the epithet on to a relative's child or to an adopted infant, who also bears another name as well. Chiefs

whom anyone disliked got uncomplimentary names attached to them like *Hookano*, (proud), *Pupuka*, (worthless), *Ka aihue*, (the thief), *Kamakaeha* (sore eyes), which was one of the Queen Liliu-okalani's names. The chief to whom such a name was attached usually transferred it to the child of a dependent or to an adopted child, with the prefix *alii* (chief), as, *Ke alii hookano* (the proud chief); *Ke alii kanaka ole* (the chief without servants); *Ke alii pio* (the captive chief). Such a name is called *inoa kuamuamu*, or "scurrilous name." The reason Mrs. Pukui gives for this practise is to shame the giver of the scurrilous epithet, which will now live as long as the child; but it looks as if there were a deeper reason than this, perhaps depending upon fear of the power of a curse and the wish to avert it to some other and helpless recipient.

No child could be given such an opprobrious epithet for a name who had received a "secret name" from the gods. A secret name is called *inoa kahea o ka po*, or "name announced by the gods." It is revealed in a dream by the gods to some member of the family and will insure luck and protection to the child by the god or goddess for whom the child is named. The name may be revealed either before or immediately after birth and must be given to the child at once, for failure to so name it would result in the death or crippling of the child. Mrs. Pukui's secret name is *Ka-wena-ula-o-ka-lani-a-Hiiaka-i-ka-poli-o-Pele*, meaning "The rosy reflection in the heavens made by Hiiaka in the bosom of Pele." The "secret name" is supposed to be kept only in the family. If a sorcerer is able to proclaim it, that fact seals him as a *kahuna ike*, "supernatural sorcerer" or seer.

The following story from Kau district on Hawaii recounts the giving of such a name by a god.

A woman at Waikapuna often had dreams of a lover appearing to her from the ocean depths. Her husband was naturally indignant, and when he knew that a child was coming, he told his wife that if the baby was born from her mouth he would allow it to live, for then he would know it was the child of a god, but if it came in the natural way, he would kill it. One day the woman went to the beach and sat by a *kaheka*, or shallow pool where the water had filled a rock-bound depression. She was eating sugar-cane, and as one of her eyes irritated her, she rubbed it vigorously. The eye forthwith fell out and from its cavity came a wee shark which she named *Ka-lani* ("The heavens") and cast into the ocean. When she returned home, her husband

believed her story because of the missing eye. The father of this shark was Kua, the shark-god, and the birth-place is still called Ai-na-ko, "Eating of cane," to this day.

Kalani became very friendly with two fishermen and used to bring them shell-fish on his back, meanwhile driving a whole school of fish before him into their net. One of these men had a daughter named Kalawaia-holona, or "Amateur fisherman," which name had been bestowed on these two friends in ridicule. Her first son died and her next baby was still-born. Her father's companion was a *kahuna*, or seer. He saw that Kalani was incensed because his friends did not name the child after him. So he placed the still-born infant in an *umeke*, or calabash, held it up toward the rising sun and prayed, calling the child Hanau-maka-o-ka-lani, "Heavenly-born-eye," and as soon as he did so the little girl revived.

THE *MAWAEWAE*, OR CEREMONY TO INSURE MILK TO THE MOTHER

Two important ceremonies are carried out for the child in infancy,¹⁴ one to insure milk to the mother, called the ceremony of *mawaewae*, "to clear the way," the other the *ukuhi* or "weaning."

In old days the mother's milk was all the milk the baby had, before goats and cows were introduced. But the ceremony to insure milk to a mother to feed her baby is still performed among all classes. A member of the family fetches a gourd full of spring water and a sweet potato vine about a foot and a half in length. The mother then stands at the door facing the rising sun, takes the potato vine and dips it into the calabash. Smiting herself with the vine on the right breast she says, "E, Ku, e! Ho mai a nui, a mapuna puna, a kahe a wai!" "O Ku,¹⁵ listen! I want milk for my baby; give me milk in abundance like a bubbling spring, flowing like water." Again smiting herself on the left breast she repeats the same.

In families of chiefs and priests, as Mrs. Pukui says, soon after the birth of a first-born child, a more complex ceremonial is employed. For this ceremony a member of the family must secure

¹⁴ No special ceremony attends a child's naming day. If in case of a revelation from a god the child is named immediately, nothing more is done, that being sufficient. But if the naming is neglected and the child falls violently ill, the family must give a feast for the gods. Pork and several kinds of fish and *awa* drink are served and the child named by a member of the family at the door, after begging the god's pardon. The god then partakes of the spirit of the food while the family eat the substance, all bones left from the feast being carefully gathered and buried.

Ordinarily, however, there are no naming days, but feasts are given on the child's birthday, especially the first year.

¹⁵ Ku is one of the four great gods of Hawaii, Hina is his wife.

from the sea *aholehole* (a fish resembling white perch or sea bass), *kuapaa* ("hard-back," a marine mollusk), *kala* (a species of surgeon fish), *aama* (black crab), *limu* (sea-weed), and from the stream *opae* (shrimp). All this food is placed upon a *ti*-leaf (*Cordyline terminalis*). A pig has meanwhile been roasted in an underground oven. The tip of the ears, a bit of the nose and of each foot, the tip of the tail and a portion of the liver are cut off and placed on another *ti*-leaf. Half a cocoanut shell of *awa* drink is also given. The following prayer is then offered:

O Ku! Hina!
 Here is the sacrifice,
 The gift of love to you both.
 O ye gods,
 Give, O Ku, milk on the right side,
 Give, O Hina, milk on the left side,
 Transfer life to the mother
 And also to your offspring (literally "seedling"), your favorite,
 Until he creeps feebly, his steps totter and his breath is short
 (And he becomes ripe and brown) like a pandanus-leaf.
 Life is from you, O gods, until the blossoming at the end.
 Amama, it is freed.

E Ku! e Hina!
 Eia ka ai, he kanaenae aloha ia olua,
 E na akua,
 Ho mai, e Ku, i waiu ma ka aoao akau.
 Ho mai, e Hina, i waiu ma ka aoao hema,
 I ola no ka makuahine,
 A i ka olua pupapula, ka olua punahele,
 A kolo pupu, a hinewau, a poko ka hanu, a pala lauhala?
 Ke ola ia a olua, e na akua, a kau i ka pua ancane.
 Amama, ua noa, lele wale akula.

The mother must eat all the food offered to her on the two leaves and drink the *awa* before the family have finished eating the rest of the pig; nothing must be left but the bones, which must be gathered up carefully and burned to ashes or thrown into the ocean.

THE UKUHI OR WEANING CEREMONY¹⁶

Of *ukuhi* or weaning ceremonies there are many forms. The first four forms given here have been used in Mrs. Pukui's family

¹⁶ The ceremony of circumcision which used to be practised by all Hawaiians in ancient times and is still occasionally practised, is described by Fornander (*Collection*,

for generations, she herself having been weaned by the "stone" form (number 2). The fifth form was used by Mrs. Annie Woolsey when she weaned her first child. All consist in the use of particular objects, an interrogation and assent, a prayer, a test of the reaction of the child upon the objects presented, followed by a feast called *aha-aina ukuhi* or "weaning feast." The distinguishing factor is the object selected for the test.

1. Mother and child face the person who performs the ceremony. Two ripe *lele* ("flying") bananas are placed before them. The officiating person asks, *Ua makemake anei oe-elele ka waiu mai ia oe aku* "Do you desire, so-and-so, the milk to fly away from you?"

The mother as proxy for the child says, *Ae!* "Yes!"

E lele, a lele loa, aole e ai hou "To fly, fly forever, and you never to partake of it again?"

The mother says, *Ae!*

Then the officiator repeats the following prayer:

O Ku, hearken! here are bananas, flying bananas,
Make to fly the nursing of so-and-so.
Not to relish, not to desire,
Not in any way to take the breast.
So be it, it is free."

E, Ku, e, eia ka maia, he maia lele.
E hoolele i ka ai waiu o—,
Aole ka ono, aole ka makemake,
Aole ma na ano a pau,
Aole oia e kii hou i ka waiu.
Amama,—ua noa.

The prayer is repeated with Hina's name substituted for Ku's. If the child grasps the bananas and tries to eat them, the ceremony is a success, but if he ignores them, the feast and ceremony are repeated at a later date.

2. Two round smooth stones are placed before the child. The same questions are asked and the same answers must be given. The prayer offered is as follows:

3:6) and by Malo, *Hawaiian Antiquities* (translated by Emerson, 1898) 127-129; 182. The operation is a mere slitting and not circumcision in its strict sense, according to note (3) page 129. Cf. Ellis, *Polynesian Researches*, 1:258-261.

O Ku, listen! take away
The sweetness of the milk,
The desire for the milk,
The teasing for the milk.
So be it, it is free.

E, Ku, e! e lawe aku i
Ka ono ana o ka waiu,
Ka makemake o ka waiu,
Ka hoopunini i ka waiu.
Amama, ua noa.

The same prayer is made to Hina, but it ends with

Life to your offspring, until the blossoming at the end.
E ola ka olua pulapula a kau i ka pua aneane.

This is followed by the *Amama*, etc.

Should the child grasp a stone and throw it out of doors he is weaned. If he pays no attention to the stones, or throws the one he takes indoors, the same feast and ceremony must be given again later on.

3. A calabash of water is placed in the same position as in the other two ceremonies, and questions, answers, and prayer follow the same form as in number 2. If the baby places his hands inside the calabash and splashes the water, the performance is successful; otherwise it must be repeated.

4. A pure white cock, called *moa uakea*, is placed before the mother and child and questions and answers and prayers are repeated as in 2 and 3. Should the child try to injure or kill the fowl the ceremony is a success, otherwise it must be repeated.

5. In a bowl of spring water were placed two flowers, one to represent Ku, the other Hina. On this occasion, the mother's grandmother performed the ceremony. Mother and child stood facing the east. (To the question "Why?" the answer was, "because they desired light not darkness"). The baby thrust her hands into the bowl and grasped *both* blossoms. This destroyed the charm, for one flower or the other should have been taken,—if Ku's then the prayer would be to him, if Hina's then to her. The family were greatly disappointed, but after a short time the mother had a dream revealing what she must do to insure success. An *ehu* (sandy-haired) woman appeared to her and told her to use one

red and one white blossom. Satisfactory results came from following her directions.

In the prayers the invocation is repeated to the god Ku and to his wife Hina because the feminine deities have control over the right side of the body, the masculine over the left side. The selection of the "flying" banana and the pun which employs it for the invocation are characteristic of the sacred use made of names in religious ritual. For example, in the ceremony to secure milk for the mother one of the fishes to be secured for the offering is the *kala*, a word which means "forgive." Thus the Hawaiians played upon the names of the foods which they placed before their gods.¹⁷

INFANTICIDE AND ADOPTION

Infanticide was practised by the aristocracy in old days often as a means of preserving rank. If a woman of chief rank was pregnant through a commoner, her relations watched for an opportunity to take the new-born child and put it immediately to death.¹⁸ Sometimes a compassionate servant would take the child and hide it.

Common people practised infanticide to rid themselves of work.¹⁹ Often they were too busy waiting on their chiefs to bother about raising children.

Adoption was practised by the common people for two reasons, either because it was too much trouble for the parents to raise the

¹⁷ Malo tells us (op. cit. 119-127) that in old days, when women and children were not allowed to enter the men's house, or to eat with them, the weaning period was an important step for the boy because it marked the time of his leaving the woman's house, or *noa*, and entering the men's eating house or *mua*. This was spoken of as *ua ka ia ka mua*. After this time he was separated from his mother and brought up with the men of the household. The household idols were brought out, a pig's head offered, and the ear placed in a gourd hung about the neck of one of the idols as a symbol of wealth. At the feast, bananas, cocoanuts, and awa were offered to the gods and then eaten by the worshippers in order to lift the food taboo from the child, these articles of food being taboo for the women. The highly symbolic prayer quoted by Malo is much more elaborate than those prayers cited to-day for the weaning ceremony.

¹⁸ Cf. Malo, 98; Ellis, *Polynesian Researches*, 1.256; *Tour through Hawaii*, 300.

¹⁹ Ellis, *Polynesian Researches*, 1.248-258; *Tour through Hawaii*, 298-302. The attitude of Polynesian parents toward their infants in old days was much like our own toward a family of pups or kittens, which must so shock the sensibilities of a Brahmin.

child and some one else took a fancy to it, or as a protection to the child if the parents had themselves lost other children.

In a chief's family, a boy was often adopted by his father's relatives and the girl by her mother's; or one would be adopted and the other kept so that when they grew up they might be married. The issue of such a union of brother and sister of high rank belonged to the *alii niau pio*, chiefs of the highest rank. Such offspring ranked above either parent because they possessed double virtue from the double union.²⁰

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²⁰ Malo, 80-81, 99. Every care was taken to secure the purest line of descent for the first-born child; after the birth of the first-born, children might be born of inferior unions. The mother's rank always counted before the father's. Malo, 179, describes the religious ceremonies performed by the chiefs to secure offspring of divine rank. Cf. Fornander *Collection* 3:308. In Fornander's story of *Hinaaimalama*, op. cit. 2:266, we have an account of such a brother and sister marriage. See also Rivers, *History of Melanesian Society*, 1:380

THE ORIGIN OF THE PLAINS EARTH LODGE

By RALPH LINTON

THE large earth-covered dwellings of the Indians living along the Missouri river have repeatedly been figured and described, and their general form is familiar to all students of American ethnology. Their origin is an archaeological problem which can not be solved until more work has been done in this region, but a study of the historic structures reveals some suggestive facts.

Earth lodges of the Plains type were constructed by some ten different tribes in historic times and a number of others have traditions of the use of some sort of earth-covered house. Several of the historic earth-lodge tribes seem to have originally used dwellings of other types. The Omaha and Ponca say that they borrowed the earth lodge from the Arikara¹ and this probably holds for the other tribes of the Dhegiha group. The Skidi Pawnee claim to have originally lived in tipis,² and the great individual variation in the structure of the lodges of all the Pawnee bands suggests that the type was not an ancient one among them. The Iowa and Oto claim to have used earth lodges in their old home in Minnesota, but those described in the Iowa tradition given by Pond³ apparently were not of the regular Plains type. The historic lodges of the Oto seem to have been much like those of the Omaha, but had a peculiar secondary pit, in the middle of the excavated floor, where the residents could sit around the fire.⁴ The Mandan, Hidatsa, and Arikara say that they have used earth lodges from the earliest times and their historic lodges apparently showed less individual variation than those of any of the tribes to the south of them.

¹ Fletcher, A. C. and La Flesche, F.: The Omaha Tribe, 27th Annual Rep. B. A. p. 75.

² Dorsey, G. A.: Traditions of the Skidi Pawnee, Boston, 1904, p. XIV.

³ Pond: Minnesota Historical Collections, 1852, p. 24.

⁴ Bradbury, John: Travels in the Interior of America, etc. in *Early Western Travels, 1748-1846*, R. G. Thwaites, editor, Cleveland, 1904, vol 5, p. 79.

In spite of the tribal and individual variations in earth-lodge construction, all the historic structures resembled each other in so many details that it seems well nigh certain that they were developed from a single ancestral form. This form appears to have been characterized by a circular ground plan, a projecting entrance way, a more or less excavated floor, a central fire pit, a platform or series of platforms around the walls, a roof support consisting of an outer row of posts connected by stringers and a central group of much heavier posts, also connected by beams, closely spaced radial rafters, a grass thatch, and a final dressing of earth or sod. The number of posts used in the central support of this original type is of some importance in connection with the structures found in a neighboring area. The lodges of the historic tribes varied considerably in this particular, but the Mandan, Hidatsa and Arikara seem never to have used more than four. The Pawnee, although they sometimes used as many as eight in their largest lodges, never referred to more than four in their ceremonies.⁵ It is probable, therefore, that the ancestral earth lodge had a four-post central support. In view of the traditional evidence, and that afforded by the dwellings themselves, the lodges of the Mandan, Hidatsa, and Arikara probably approached the ancestral type more closely than those of any other tribe. The lodges of these three groups were practically identical in structure, although those of the Arikara are said to have been somewhat more deeply excavated and to have differed slightly from the others in the pitch of the roof and walls. The description of a Hidatsa lodge given by Matthews⁶ may serve for all three. He says:—

“Each of these lodges consisted of a wooden frame covered with willows, hay and earth. . . . The door is made of rawhide stretched on a frame, or of puncheons, and is protected by a narrow shed or entrance six to ten feet long. . . . On the site of the proposed lodge they often dig down a foot or more in order to find earth compact enough to form a good floor; so, in some lodges, the floors are lower than the general surface of the ground on which the village stands. The floor is of earth and has in its center a circular depression, for a fire place, about a foot deep, and three or four feet wide, with an edging of flat rock. These dwellings, being from thirty to forty feet in

⁵ Dorsey, G. A.: Unpublished notes in Field Museum.

⁶ Matthews, W.: *Ethnology and Philology of the Hidatsa Indians*, U. S. Geograph. and Geological Survey, Miscellaneous Pub. no. 7, pp. 4-7.

diameter, from ten to fifteen feet high in the center, and from five to seven feet high at the eaves, are quite commodious. The work of constructing them is performed mostly by the women, but in lifting and setting the heavier timbers the men assist. . . . The frame of the lodge is thus made; a number of stout posts, from ten to fifteen according to the size of the lodge, and rising to a height of about five feet above the surface of the ground, are set about ten feet apart in a circle. On the tops of these posts solid beams are laid extending from one to another. Then toward the center of the lodge four more posts are erected, of much greater diameter than the outer posts, and rising to a height of ten or more feet above the earth. These four posts stand in the corners of a square of about fifteen feet and their tops are connected by four heavy logs or beams laid horizontally. From the four central beams to the small external beams, long poles, as rafters, are stretched at an angle of about thirty degrees with the horizon, and from the outer beams to the earth a number of shorter poles are laid at an angle of about forty-five degrees. Finally a number of rails or saplings are laid horizontally to cover the space between the four central beams, leaving only a hole for the combined skylight and chimney. The frame is then covered with willows, hay and earth as before mentioned; the covering being of equal depth over all parts of the frame.

Henry⁷ says that the space between the center posts was roofed by placing timbers crisscross over the beams of the central support, leaving a smoke hole in the center.

The "hot-houses" of the Chickasaw and Chocktaw seem to have borne a very close resemblance to the earth lodges just described; Adair⁸ says:—

"They provide themselves for the winter with hot houses. To raise these they fix deep in the ground a sufficient number of strong forked posts, at a proportional distance, in a circular form, all of an equal height about five or six feet above the surface of the ground. Above these they tie very securely large pieces of the heart of white oak, which are of a tough flexible nature, interweaving this orbit from top to bottom with pieces of the same or like timber. Then in the middle of the fabric they fix very deep in the ground four large pine posts, in a quadrangular form, notched atop, on which they lay a number of heavy logs, let into each other and rounding gradually to the top. Above this huge pile, to the very top, they lay a number of long dry poles, all properly notched to keep strong hold of the upper posts and wall plate. Then they weave them thick with their split saplings and daub them all over about six or seven inches thick with tough clay, well mixed with withered grass. When this cement is half dried they thatch the house with the longest kind of dry grass. They first lay on one round tier,

⁷ Henry, Alexander: *New Light on the Early History of the Greater Northwest*, New York, 1897, vol. 1, p. 338.

⁸ Adair, James: *The American Indians*, London, 1775, pp. 417-20.

placing a split sapling atop, well tied to different parts of the under pieces of timber, about fifteen inches below the eaves, and in this manner they proceed circularly to the very spire, where commonly a pole is fixed which displays on the top the figure of a large carved eagle, at a short distance below which four heavy logs are strongly tied together across, in a quadrangular form, in order to secure the roof from the power of envious blasts. The door of this winter palace is commonly about four feet high, and so narrow as not to admit two to enter it abreast, with a winding passage for a space of six or seven feet to secure themselves both from the power of the bleak wind, and of an invading enemy. As they usually build on rising ground, the floor is often a yard lower than the earth, which serves them as a breastwork against an enemy, and a small peeping window is level with the surface of the outside ground to enable them to rake any lurking enemy in case of attack The inside of the house is furnished with easy genteel couches to sit and lie upon, raised upon four sticks of timber to proper height. . . .

Every town has a large edifice, which with propriety may be called the mountain house, in comparison to those already described. But the only difference between it and the winter house is in its dimensions and application.

A comparison of the foregoing description with Matthews' description of the Hidatsa earth lodge shows a practical identity in all essential features. The only important differences are the absence of a smoke hole and top dressing of earth in the western Muskogean structures and of wattle and daub construction in the earth lodges. The resemblance is so close as to make an independent origin of the two types highly improbable, and the important question is whether the form of construction ancestral to both originated in the north or south.

Several things point to the southern origin of the earth lodge. The use of a heavy grass thatch under the earth covering seems to have been a constant feature. Thatched houses were used along the Gulf coast, in the lower Mississippi valley, and among the Caddoan tribes of the southern plains but were unknown in the north. The Indians of the Eastern Woodlands area uniformly covered their dwellings with mats or bark, and if the earth-lodge had been developed in the north it seems probable that these materials would have been used instead of grass. The Muskogean hot houses were built as winter dwellings and their heavy construction served a practical purpose. The Plains earth lodges, on the other hand, were essentially summer dwellings, occupied while the crops were being cultivated, and most of the

tribes who used them spent a large part of the winter in skin tipis. Matthews⁶ says that the Hidatsa regularly left their earth lodges in the winter and repaired to the heavy timber, where they lived in log cabins somewhat like those of the whites. It is evident that the earth lodges were not built as a protection against cold, and it is hard to find any sound economic reason for the expenditure of so much labor on a summer house. It is also significant that the Plains tribes who seem to have used the earth lodge for the longest time were also those who had made the greatest advance in agriculture and pottery, arts which were still more highly developed in the south and were presumably diffused northward from that region.

Although circular hot-houses were used by all the Muskogean tribes and by the Cherokee, those of the Creek and Cherokee seem to have resembled the western Muskogean structures somewhat less than these resembled the Plains earth lodges. The roofs of the Cherokee council houses were banked with earth⁹ and they had a different style of roof support, with a massive center pole and several concentric circles of posts. The Creek hot-houses seem to have been quite variable. Bark was substituted for thatch¹⁰ and Romans¹¹ says that they were often rectangular instead of round. Bartram¹² gives a drawing of one with a center pole and Hawkins¹³ mentions the use of an eight-post central support. All this suggests that the structural features common to the earth lodges and hot-houses were developed in the lower Mississippi valley rather than at any point farther east.

It seems probable that structures of the ancestral Plains earth-lodge type were used at one time or another over a continuous

⁹ Bartram, William: *Travels Through North and South Carolina*, Reprint, London, 1792, pp. 365-67.

¹⁰ Schoolcraft, H. R.: *Indian Tribes of the United States*, Philadelphia, 1856, Pt. 5, p. 265.

¹¹ Romans, Bernard: *A Concise History of East and West Florida*, New York, 1776, p. 96.

¹² Bartram, William: *Observations on the Creek and Cherokee Indians—1789*, In *Transactions of the American Ethnological Society*, New York, 1853, Vol. III, Pt. 1, p. 52.

¹³ Hawkins, Benjamin: *A Sketch of the Creek Country in the years 1798 and 1799*. In *Collections Georgia Historical Society*, Savannah, 1848, Vol. III, Pt. 1, pp. 71-72.

area extending from the great bend of the Missouri nearly to the mouth of the Mississippi, but this can not be proved until we have more archaeological information. The fact that we find the closest correspondence between the structures used by the historic tribes at the northern and southern ends of this territory is quite in keeping with our present knowledge of tribal movements on the lower Missouri. The southern earth-lodge tribes of Siouan stock all have traditions of having entered the region from the east or northeast in comparatively recent times. The Arikara once lived far to the south of their historic territory and were driven northward by this invasion¹⁴ and there are several features of Mandan culture which suggest a southern origin for that tribe also. As the earth lodge seems to have been an ancient and stabilized feature of Arikara and Mandan culture, it seems probable that they carried it northward in their migration, retaining most of the original features. The newly arrived Siouan tribes, on the other hand, took over this form of construction without its religious associations and modified it freely.

On the margins of the ancient Plains earth-lodge area we find a use of structures embodying some of the traits of the ancestral Plains form. Harrington¹⁵ found earth-covered dwellings with entrance passages in Caddo sites in southwestern Arkansas, but these seem to have been quite variable in shape, with no central supports, and with floors which were only occasionally excavated. The Wichita lodges described by Doyle¹⁶ suggest the earth lodge in their circular form, deeply excavated floors and earth-banked walls, but differed in other particulars. On the southeast were the Creek and Cherokee hot-houses, previously described, while still further east, in the Carolinas, there seems to have been a small area of genuine earth-lodge construction. The Eno, Shoccoree and Adshusheer of North Carolina lived in circular houses made of branches interwoven and plastered with

¹⁴ Handbook of American Indians, Bulletin 30, B. A. E. Article *Arikara*.

¹⁵ Harrington, M. R.: Certain Caddo Sites in Arkansas, Indian Notes and Monographs, Museum of the Amer. Indian, New York, 1920, pp. 70-81 and pp. 256-8.

¹⁶ Doyle, W. E.: Indian Forts and Dwellings, Annual Rep. of the Smithsonian Institution, 1876, p. 461.

clay¹⁷ and similar dwellings are reported from some unidentified tribes of South Carolina.¹⁸ Bushnell¹⁹ mentions the remains of circular houses with excavated floors and earth-banked walls, possibly earth lodges, in Alabama, Tennessee, Kentucky and southern Illinois.

Surface observations in Minnesota and Wisconsin indicate that earth-covered structures of some sort were once used for a considerable distance to the east of the historic earth-lodge area²⁰ but there is some doubt whether these buildings were of Plains type. Williamson²¹ says:—

By far the most numerous class (of Minnesota mounds) appear from their size and situation to be what the Dakota traditions say they are; the remains of houses made of poles and bark covered with earth. . . . The base usually approaches an oval form. Their length is from ten to forty feet and a few exceed this, with a height of from one or two feet to three or four.

None of the Plains earth lodges were oval and bark was not employed in their construction. The Iowa tradition given by Pond³ says that, while in Minnesota, their dwellings were made by "leaning poles together at the top and spreading them at the foot, forming a circular frame which they covered with earth," a description which would hardly apply to the Plains earth lodge.

The Dakota, although they did not use the Plains earth-lodge in historic times, occasionally built earth-covered dwellings of a different type. Will²² says:—

Another object observed at Slim Buttes is of considerable interest. It is a ruined Indian lodge of the usual tipi shape, but substantially built. It is about ten feet in diameter and twelve high. Instead of consisting of a mere framework covered with skins, however, the superstructure was solidly built of ashen poles, from an inch to three quarters of an inch in diameter, laid close together. Over these sticks are the much decayed remains of a straw or grass covering, over which had been placed earth to a thickness of

¹⁷ Mooney, James: *The Siouan Tribes of the East*, Bulletin 22, B. A. E., p. 63.

¹⁸ Ruidiaz y Mendoza: *La Florida*, Madrid, 1893, vol. 2, *Relacion IV*, p. 478.

¹⁹ Bushnell, D. I.: *Native Villages and Village Sites East of the Mississippi*, Bulletin 69 B. A. E. pp. 97-9.

²⁰ Winchell.: *The Prehistoric Habitations of the Sioux*, Science, N. S. vol. XXVII, March 13, 1908.

²¹ Williamson: *Minnesota Historical Collections*, 1856, p. 10.

²² Will, G. F.: *Some Observations Made in Northwestern South Dakota*, *American Anthropologist*, N. S., vol. 11, p. 260.

several inches. The earth however for the greater part has washed off. The interior had evidently been excavated to a depth of twelve to eighteen inches when the lodge was built. Within, just back of the center, the ashes of the fire place can be seen. . . . The site chosen for it is an excellent one for a winter camp.

Solidly built tipi like lodges of poles were also used by the Hidatsa⁶ but they do not seem to have been earthcovered. Although the evidence just cited is by no means conclusive, it seems quite possible that some rather simple type of earth lodge, probably built on the tipi principle, was used in the region between the upper Missouri and Great Lakes in ancient times.

The rather wide distribution of earth lodges or earth-lodge-like structures in the Mississippi valley and Southeast may have been due to diffusion from the historic earth-lodge area, but it is hard to account for the Carolina forms on this basis. It is more probable that some type of earth lodge embodying the round shape, earth roof and excavated floor of the Plains type was once used over a considerable area in the eastern United States. Even the ancestral Plains lodge, as determined by a comparison of the historic forms, must have been a complicated structure with a fairly long cultural history, and as there are no signs of its importation into the Mississippi valley as a developed type, it seems safe to conclude that it was preceded even in its center of diffusion by some less specialized dwelling.

An interesting parallel can be traced between the conditions in the southeastern and southwestern areas in historic times. In both there was a use of rectangular buildings, built of stone or adobe in the Southwest and of wattle and daub in the Southeast, coupled with a ceremonial use of round buildings suggestive of earth lodges. One might even go a step farther and compare the family hot-houses of the southeast to the Southwestern clan kivas and the town houses to the great communal kivas which have been found in many of the later southwestern ruins. On the northern margin of the southwestern area of stone and adobe construction we find a group, the Navajo, who use circular earth lodges. On the eastern margin of the Southeastern area of wattle and daub construction we find the circular earth lodges of the Carolina tribes, while extending northwestward from the same

area we have a second region of circular earth lodge construction. The Carolina, Missouri river and Navajo earth-lodge areas were all at a considerable distance from any of the other areas in which earth lodges were used in historic times. The intensive archaeological work done in the Southwest has shown that the kivas of the historic and late prehistoric tribes were developed from a very ancient type of circular, partly excavated earth lodge, which was used as a dwelling in this region before the development of stone or adobe construction and apparently before the appearance of the rectangular house. The post-Basketmaker earth lodges discovered at the Mesa Verde have several features in common with Navajo hogans, and it seems safe to conclude that the historic Navajo structures represent a somewhat modified marginal survival of a type which was once used over much of the Southwestern area. It is probable that the Carolina and Missouri river earth lodges were also marginal survivals of an old type of dwelling from which the southeastern hot-houses had been developed in somewhat the same way that the kiva was developed from the ancient southwestern earth lodge. This can not be proved until we have more archaeological data, but everything points to the former existence of a rather extensive area of earth lodge construction which included the Southeast and the western Mississippi valley.

The existence of an eastern earth-lodge area offers an interesting problem in view of the general North American distribution of such structures. Waterman²³ has shown that on the west coast partially excavated earth-covered dwellings, or houses apparently developed from such dwellings, were used over a continuous area extending from eastern Siberia and the Aleutian Islands to central California. In the Southwest there was a second region of excavated earth-covered dwellings, which extended westward into southern California. Its eastern limits are still unknown. The western limit of the eastern earth-lodge area seems to have been southwestern Arkansas¹⁵ but Doyle's statement that the

²³ Waterman, T. T.: *Native Houses of Western North America*, Indian Notes and Monographs, Museum of the American Indian, New York, 1921.

Kiowa formerly lived in holes in the ground²⁴ carries the related pit dwelling still farther west. The gaps separating these three North American earth-lodge areas are comparatively short, and the western and southwestern ones are linked by the earth-covered sweat lodges of central California, although these buildings seem to have lacked the pits of the structures to the north and south. The archaeology of the region between the eastern and southwestern areas is still practically unknown, and further work may extend their limits eastward and westward or even link them. It seems safe to conclude that some type of earth-covered dwelling has been used over a practically continuous area extending from eastern Siberia to the Carolinas, and it is significant that throughout this vast territory the earth lodge is nearly always associated with an old, if not the oldest, cultural stratum. Kroeber²⁵ assigns the earth-covered sweat lodge to the earliest cultural level in California, the southwestern Basketmakers and post-Basketmakers were earth-lodge users, and there is good reason to believe that in the Southeast the earth lodge preceded rectangular houses of wattle and daub. While it is possible that the three great earth-lodge areas of North America represent as many centers of independent development, it seems much more probable that American earth lodges, wherever found, are ultimately referable to a single source. None of the tribes of temperate South America developed this type of construction although several of them lived under much the same climatic conditions as the North American earth-lodge tribes. The wide distribution and evident age of the earth lodge in North America strongly suggests that the use of this type of dwelling was a feature of some very ancient generalized American culture, possibly even of that of the Asiatic migrants who were ancestral to the North American Indians.

The author's conclusions in regard to the origin of the Plains earth lodge may be summarized as follows:—The Plains earth lodge, as a distinct type, originated in the lower Mississippi valley. From its constant association with rather advanced agriculture

²⁴ Doyle, W. E. *op. cit.* p. 463.

²⁵ Kroeber, A. L. *The History of Native Culture in California*, U. of Cal. Pub. Amer. Arch. and Eth., vol. XX, p. 131.

and pottery its development and northward diffusion were probably comparatively recent. It seems to have been carried northward by tribal movements rather than solely by diffusion, the Arikara and possibly the Mandan being the principal agents. In its historic form, it represented an elaboration of a much older type of circular, partially excavated, earth-covered dwelling which was at one time used in the Southeast and probably over much of the western Mississippi drainage. This earlier form was related to a series of earth-covered structures found throughout a practically continuous area extending from eastern Siberia down the west coast of America and across the Southwest. In general, the earth lodge was a feature of a very old North American cultural stratum and its ultimate origin may have been Asiatic.

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WICHITA AND CADDO RELATIONSHIP TERMS

By LESLIE SPIER

THE following Wichita and Caddo terms¹ were obtained at Anadarko, Oklahoma, August, 1919, from John Haddon, a Kichai who habitually speaks Wichita, and Bill Edwards, a Caddo of the xasině band,² respectively. While I am reasonably sure of the Wichita, I lack confidence in the Caddo, particularly as the unusual separation of collateral from lineal relatives suggested would indicate misunderstanding.

WICHITA³

ǵ'kw, grandparent.

dada, father.

nati'āse'i, my father; used only for God (?).

da'tasikitsā, "little father:" father's younger brother; great grandfather.

da'tasiwatsā, "big father:" father's older brother; greatgrandfather (since in the last case relative age cannot be meant; possibly this term and the preceding are used indiscriminately for greatgrandfather).

ǵ'tsiǎ, mother, used by children.

natīkahe'kī, "my woman:" mother, father's sister, mother's sister.

natiatsia'tsikitsā, my father's sister or my mother's sister, both younger than mother or father (which one is not clear; probably the former); greatgrandmother.

natiatsia'tsiwatsā, my father's sister or my mother's sister, both older than mother or father; greatgrandmother (again relative age can play no part).

¹ Published by permission of the American Museum of Natural History.

² The Caddo were said to comprise the xasině, kadohadatc, hainaī, and anadark' (among others?), between whom there were slight dialectic differences. All now speak the same dialect.

³ a as in father; ǵ as in hat; ā as in hut; e as in fate; ǵ as in met; i as in pique; I as in pin; o as in note; ǵ as in not; ō as in German schön; u as in rule; ũ as in put; ω as in law, d and t may be variants of a single intermediate; ' is a weak glottal stop, except after k where it is almost a fortis; ˊ is a breath.

natikaheki nekkli, my father's sister's husband; my mother's husband (i.e. my father).

naklri yörtsski, stepfather; father's sister's husband; mother's sister's husband.

natiwatsiðssi, my mother's brother.

natidihðssi, "my old man:" mother's brother.

natidtskkłtsi, my mother's brother's wife; son's wife (cf. *nati'tsłtsi*).

This term may sometimes be used by a man for his own or a conceptual brother's wife.

hantoero'ski, man speaking—brother; son of parent's sibling.

nati'rotsłi, woman speaking—brother, as the preceding.

natilwtsł, man speaking—sister; daughter of parent's sibling.

hantare'eyatsł'i, woman speaking—sister, as the preceding. Half-brothers and sisters are siblings; step-brothers and sisters are not related.

nateöl, my child; my brother's child; my greatgrandchild: woman speaking—my sister's child. This corresponds to the designation of greatgrandparents as parents. (*natlyě'ki*, my children.)

nateöl wirsüksěě, "my child a boy:" son.

nateöl tcěrlksěě, "my child a girl:" daughter.

hirotłěöl, our (dual) child, i.e., man speaking—his own child or that of his brother; woman speaking—her own child or that of her sibling. (Perhaps this is used only in speaking to a non-sibling; cf. *hirotłokł* and *hirotłkłł*.)

natidohöl, our (plural) child, i.e., man speaking—his own or one of his brothers' children; woman speaking—her own or one of her siblings' children.

natidohöl dodikłtsłrěě, "our child the young man."

natidohöl kohek'odě'ě, "our child the young woman." These words specifying a youth or maiden may also be used with *nateöl* and *hirotłěöl*.

natłtorłkłtsi, man speaking—my sister's son.

natłtsěwatsł, man speaking—my sister's daughter.

natikłdł, my husband.

hirotsłěkłdł, our (dual) husband, used by two (real or conceptual) sisters to one another. The individual's name is suffixed when a specific reference is desired.

hirotłkłł, our (dual) husband, used by two sisters in talking to any one not their sister.

natsiŕrokŕkŕdŕ, our (plural) husband, used by three or more sisters among themselves.

natŕok'ŕ, my wife.

hŕotsio'kŕ, our (dual) wife, used by one brother to another (real or conceptual) of either's wife.

hŕrotiokŕ, our (dual) wife, used by one of two brother's of either's wife in talking with someone not a brother.

natsiorok'ok'i, our (plural) wife, i.e. the wife of any of three or more brothers talking among themselves.

natië'si, my daughter's husband; my (real or conceptual) sibling's daughter's husband; man speaking—my (real or conceptual) sister's husband.

'utckŕtsi,⁴ woman speaking—brother's wife.

natŕ'tsŕtsi, my son's wife; my (real or conceptual) sibling's son's wife; my father's brother's wife.

natŕiwaworŕsi, my grandchild; my sibling's grandchild (possibly including those of a man's sister). Where precision is demanded the words for boy, girl, young man or woman given above are suffixed.

natŕŕwovorŕŕ nekŕdŕ, "my granddaughter's husband."

natŕŕwovorŕŕ nok'ŕ, "my grandson's wife." The grandchild's spouse is jokingly called "husband" or "wife," since this follows from the designation of greatgrandchildren as children.

natsëŕwksi, my parent-in-law.

hirotsiŕtsëwksŕŕ, our (dual) parent-in-law, used by two (real or conceptual) siblings in speaking to each other about the parent-in-law of either.

hirotsiŕtsëwksŕŕkŕŕ, our (dual?) parents-in-law, used by two brothers to one another for the parents-in-law of either or both, i.e., two or four persons.

No exogamous units are said to exist. Nor were the bands or villages exogamous: on the contrary, a certain feeling of band solidarity brought about a tendency toward band endogamy. The children of the parent's brothers and sisters cannot be married; in fact, these conceptual siblings must be treated with all the respect shown to real brothers and sisters. The sororate was practised: this was considered preferable to marriage with women who were not sisters, but it was not obligatory. Usually if a man

⁴ In a communication Mr. Haddon wrote this "dutch-kits, with the d silent."

married an eldest sister and she left him or died, he would marry a younger sister if it was agreeable to her. A man could marry any of his wife's real or conceptual sisters, but not her aunt or niece. The levirate was practised only to keep a woman who had children in the family.⁵ She would marry either an older or younger brother according to choice.

Neither a man nor a woman could talk much to their parents-in-law or the brothers and sisters of these parents-in-law, nor to the wife's or husband's nephews and nieces. Communication was usually carried on through the spouse; but these relatives could be directly addressed in matters of extreme importance. This taboo is rigorously followed even to-day. On the other hand, one may joke freely with a spouse's brothers and sisters. Joking is tabooed with one's parents' siblings and with his siblings' children, but not with grandparents and all those regarded as siblings.

CADDO

ebũ't, grandfather.

ĩkũ'', grandmother.

ã'ã, father.

ãhãhaiĩme', "big father": father's older brother.

ãhãtĩt, "little father": father's younger brother; stepfather.

ĩna'', mother

ĩnahaiĩme', "big mother": mother's older sister.

ĩnatit, "little mother": mother's younger sister.

ĩkwẽ'i, stepmother.

ãhai', father's sister.

eba'', mother's brother.

ebakĩn, father-in-law; (real or conceptual) daughter's husband.

ĩnka'an, mother-in-law.

tcuahuãũ, mother's brother's wife; (real or conceptual) son's wife.

ĩne'ĩtĩt, man speaking—older brother; parents' sibling's son older than self. The final syllable *ĩtĩt* is customarily dropped in this and the following terms.

tu'ĩtĩt, man speaking—younger brother; parents' sibling's son younger than self.

⁵ G. A. Dorsey does not specify the levirate, but indicates that the deceased husband's parents must give their consent before the widow can marry again. (The Mythology of the Wichita, Carnegie Inst., Publ. 21, 1904, 10).

kɪ'niʔʔ or *kɪniʔsɪ*, woman speaking—brother; parents' sibling's son.
tai'ʔʔ, man speaking—sister; parents' sibling's daughter, woman speaking—younger sister; daughter of parents' sibling younger than self.

ie, woman speaking—older sister; parents' sibling's daughter older than self.

dahai', spouse of (real or conceptual) sibling.

sai'ʔʔ, "old lady"; wife (non-vocatively).

honʔsti, "old man": husband (non-vocatively).

nəʔsikwaʔ, spouse (non-vocatively). There seems to be no term for a spouse in direct address.

hanʔ', son; daughter: (real or conceptual) brother's child; woman speaking—(real or conceptual) sister's child.

pa''tsɪ, man speaking—sister's child (also given for father's sister's daughter, but this seems to be an error).

bəkkɪnɪc, man speaking—grandson; greatgrandson.

kahanɪc, woman speaking—grandson; greatgrandson. Both of these terms probably include the granddaughter and the greatgranddaughter.

The application of the following terms is by no means clear. *Cahū't* was given first as meaning "cross-cousin" and even "parallel-cousin," but the final explanations were the following.

cahū't, father's father's brother's son's son or daughter, etc. Presumably a cousin in the speaker's generation related through a grandparent.

sa'kɪn, father's father's brother's son's son's son or daughter, etc. Evidently the child of *cahū't*.

wahadɪn, father's father's brother's son's son's son's son or daughter, etc., i.e. the child of *sa'kɪn*.

ɪne'ʔʔ, etc., The terms for siblings are applied to the children of *wahadɪn*.

One cannot marry cross or parallel-cousins, nor any *cahū't*, *sa'kɪn*, *wahadɪn*, or their children, *ɪnéʔʔ*, etc. "One boy was at the river and he became deaf and dumb. The old men asked about him and found out his parents were *wahadɪn*." If a man marries the oldest sister of several and she dies, a younger sister may take her place if it is agreeable. There are said to be no exogamous

groups, but in conversation with my informant maternal affiliation seemed to be stressed.

Conversation is tabooed between parents-in-law and children-in-law except in cases of serious need. This is equally binding to all concerned.

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BOOK REVIEWS

METHODS AND PRINCIPLES

Studies in Evolution and Eugenics. S. J. HOLMES. Harcourt, Brace and Company. New York, 1923. 261 pp.

So much nonsense has been written in its name, that one picks up a book on eugenics with considerable apprehension. It is groundless so far as Prof. Holmes is concerned. His book is perhaps unique in its constant analysis of the biological assumptions underlying evolutionary and eugenic thought.

Its opening chapters on "Present Tendencies in Evolutionary Theory" are, I think, the most valuable portion of the book,—though Prof. Holmes would probably disagree. They are especially important to us in weighing the bearing of recent biological investigation on Darwin's theory of natural selection and the traditionally antithetical transmission of acquired characters.

These divergent views are by no means so clearly separated today. Darwin himself believed that somatic transmission was a potent subsidiary factor, and not infrequently availed himself of this explanation to get out of a tight place. The recognition of the lack of closeness of adaptation—which the older theorists thought primarily needed explanation—leaves a larger field for other theories. Isolation is recognized as a factor in producing species regardless of the operation of natural selection. The absence of a close adaptation means that origins (first mutations) may be by large variations. Yet the mutationists have had to modify their view of sudden rather than slow origins, because breeding experiments show that stable hereditary variations are not, as a rule, of large extent. On the other hand, the small individual variations to which Darwin attributed such importance are often purely somatic and have no effect on the next generation. Mutationists and Darwinians have thus been compelled to draw closer to each other.

Nor are the hereditary variations so easily distinguished. The concept of a unit character is giving way before the idea that every character is the result of many factors. Such unit factors, while primarily affecting one part of the body, seem to change the entire

organism to some extent. It will be observed that this leaves much greater latitude for the interrelations of variations, adaptations, and selection.

How much of evolution is explained by the doctrine of natural selection? That natural selection operates is evident: it appears in a differential death incidence. But how good an explanation is it of the cause of evolution? It explains adaptations as the outcome of natural forces working on the basis of "fortuitous" variations. It does not explain variation, yet true novel variations seem to occur. These are probably the result of "the chemical transformation of a small part of a chromosome representing . . . a gene or hereditary factor." Whether such variations are accidental or the result of design remains unexplained. The kind of variation is apparently quite fortuitous. Previous variations seem to have no effect on their direction and environment does not seem to produce certain results on either their appearance or their kind. As to selection, environment is inert: "the cause of survival is the cause of the particular variation that is spared by the environment that kills off the others." Natural selection then explains evolution in terms of a multitude of unknown causes.

The neo-Lamarckians will find Prof. Holmes sceptical. The alcoholization experiments of Stockard and Mac Dowell indicate perhaps no more than that vitality is impaired in the offspring: Guyer's work on the transmission of lens defects in rabbits is inconclusive. A large series of experiments with the fruit-fly in a variety of environments, made under the author's direction, yielded negative results.

If natural selection is interfered with does degeneration result? Degeneration of the structure of organs in many life-forms is a matter of observation: it is explained by the Lamarckians on the basis of disuse. Weismann thought it a tendency of organs to degenerate on account of the suspension of the preserving influences of natural selection (which he called *panmixia*). Modern experimentation in genetics has justified his view, in the opinion of Prof. Holmes, for the majority of observed hereditary variations are failures from the standpoint of adaptiveness, that is, they are minus variations. Natural selection might also favor selections in the direction of reduced size. But it must be recognized that there is at least another alternative. It should not be assumed that these structures have any significance in the life of the animal, that any character we pick

out, say, a spot on a butterfly wing, has any selective value. Selection acts on the whole organism. "Variations which have a selective value in one part may entail slighter changes in many other parts," which will be tolerated so long as they do not become too injurious.

It is just here that Prof. Holmes finds biological grounding for his interest in eugenics. Panmixia conceivably is easy to bring about. Man unquestionably owes his origin to selection, but the forms of selection have greatly changed as a result of a changed social environment. It is possible that natural selection is being interfered with by our social relations. Yet it seems that today natural selection may be acting more vigorously than ever. The conquest of the purely adventitious causes of death by medicine has only made mortality more selective. Further, the less gifted suffer for ignorance. With a constant sifting of the economic groups, whereby the less intelligent, etc., find their way into the lowest strata which are most hazardous for successful propagation. Yet by an anomaly they are most prolific, whereas college graduates, etc., fail to have sufficient offspring to replace themselves—which, Prof. Holmes adds, is their duty to the race. Nowhere do I find, however, a discussion of what proportion of the two groups become adults and propagate!

I think we have encountered Prof. Holmes's blind spot when he talks of immigration and race mixture. Recent immigration to the United States is largely from southern and eastern Europe. As evidenced by the Army tests some of these immigrants are racially low. "Just as there are families on a low mental level, so there may be peoples on a low mental level" (p. 211). "It takes good inheritance to support a high civilization" (p. 62). As to the results of race mixture, either within the white race or with other races, the evidence is conflicting, but we have nothing to gain by such interbreeding. That each race has a harmonious combination of shape of skull, size of jaw, etc., while crosses frequently result in unfortunate combinations, sounds like nonsense. That we are justified in discriminating among peoples, if we even *suspect* that some are questionable, must depend on the point of view. Yet even here Prof. Holmes's strong habits of fairness in biological problems leads him to exercise considerable restraint and his purely social program is generously conceived.

I can find no fault with a man because his philosophy and mine do not jibe. But why a biologist, or a tinsmith, or any one else, should be concerned for the future of the race, I do not understand.

An occasional fact may be doubted. What scientific evidence is there that women of more southern climates mature more quickly than those farther north (p. 177)? And one chapter (IV) is in questionable taste: it is extravagant and alarmist (Why must a "popular" article, as this was, always be without restraint?) and is refuted in the following section.¹

LESLIE SPIER

The Coming of Man. JOHN B. TYLER. (The Amherst Books.)
Marshall Jones Company: Boston, Mass., 1923. viii, 147 pp.

The first part of this book consists in an account of evolution by a trained biologist; the consequent combination of great familiarity with and aloofness from the subject, perspective being gained together with a certain loss of focus, is not without its aesthetic appeal. It reminds one of those slightly idealized etchings a painter still makes of landscapes and figures he has dearly loved. There is attenuation of interest, but greater poignancy of feeling. That such a personal note is not incompatible with the handling of the theme of evolution, is Mr. Tyler's highly creditable achievement. In the second part we have the result of a biologist's concern with the field of prehistoric culture. Mr. Tyler, if he does not strike here an original note, imparts to his tale certain qualities that make it essentially readable. We are in an age of outlines. Mr. Wells's epoch-making book promoted popular interest in that kind of presentation. Mr. Van Loon followed suit. An incipient genre, no doubt, Mr. Tyler introduces us to the daily drama of cultural life in primitive times. There is something refreshingly quotidian in his presentation of that original adventure of mankind. The momentousness of things done for the first time ceases to oppress us.

The third panel of the triptych, however, appears in such an unfavorable light that it blasts our impression of the whole. There, Mr. Tyler attacks certain problems such as, for instance, that of the relations between ethics and evolution. The style which the outline of the subject, perhaps sharper in the first two thirds of the book,

¹ The picture of a savage community in which there is constant physical conflict does not fit any known group on the globe today. Richardson's account of the Chippewa (Chippewyan?) wrestling matches has often been quoted in this connection (p. 68.) But I assure Prof. Holmes that it is not typical of savages in general. Wrestling for a bride is confined to some tribes of northern North America and adjacent Siberia: in a word, it is a locally distributed trait.

had kept up to a modicum of definiteness and propriety, immediately as truisms troop in, drops into a painful drivél of clichés. The obvious he is conscious of defending runs amuck with Mr. Tyler.

Among points which might call for discussion, let us list briefly the following, that man became an agriculturist because population increased, (p. 102), that hoe-culture is everywhere woman's work, (p. 55), that the laws of taboo were prescribed by the priests (p. 56), that explanations in terms of the goal are more satisfactory than those in terms of origins (p. 29). Certain criticisms of detail may find their place at this juncture. That slightly dramatized presentation of evolution which the author did so well in the opening chapters is unduly reiterated in the chapter on the survival of the fittest. Redundancy is felt. Quotations are altogether too much in evidence, on an average of more than one to the page, generally ushered in by *says* when it is not *said*. The typographic work is excellent.

The publishers expressly warn us that the Amherst Books "deal simply and clearly with matters and problems of significance and are addressed primarily not to the expert and specialist, but to the general intelligent public." The author's preface confirms that laudable intention. But, we may ask, what is the general intelligent public to do with a statement like the following:

But why waste time on Hebrew or Greek thought? We are pure-blooded modern, *nordic* (the author's italics) Aryans. (p. 125),

or this:

Man of the species *Simia destructor* has wrought much ruin in the world, as *Homo Sapiens* he may help to restore and transfigure it. (p. 101).

Instead of the direct if somewhat generalized statements one would expect in a book of broad educational purpose, we get too often mere allusions to facts or theories. A great many pages thus read like editorials. They have that knack of presenting things in a high-sounding, though trite phraseology which tickles the reader with a sense of familiarity and at the same time convinces him that he is taken into the arcana of science. Of this the national Elbert Hubbard had a mastery. It brought into this age of industrial complexity the abbreviated perspective of patriarchalism. Non-technical language admittedly is the gift of the few. Least of all does it mean resorting to headline captions. In a great many places Mr. Tyler's style becomes mildly apocalyptic; parlor aphorisms and arm-chair vaticinations fill the air.

The problem Mr. Tyler is trying to solve is, indeed, none other than the problem of God. Are ethics natural? It is an old motive in European literature. Not to go far afield we have *Paradise Lost*. Even yesterday our Dostoievsky, hectic and morbid, was wrestling with it. His *Brothers Karamazov* is a far-reaching orchestration of a theme which will not endure fiddler's work.

P. L. FAYE

AMERICA

American Indians; Tribes of the Prairies and the East. HERMANN DENGLE. New York: Albert and Charles Boni, 1923. VII, 80 pp.; 96 ill., 1 colored plate.

Apart from the brief preface and the terminal map, this little book is made up entirely of illustrations culled from the older literature. Most of them are familiar to the professional anthropologist, but even he will be glad to have so many old friends brought together under a single cover, while the general reader would hardly have ready access elsewhere to De Bry or to Rudolf F. Kurz. Some inconsistency is shown in citing the sources, as when a number of illustrations from Maxmilian's Atlas are credited to the explorer himself, others to Bodmer, still others to the engravers; or when some of Catlin's pictures are reproduced with his name and others without it. However, this is a venial fault and the publishers should be congratulated on their meritorious enterprise.

ROBERT H. LOWIE

The Ancient Quipu or Peruvian Knot Record. L. LELAND LOCKE. New York: The American Museum of Natural History, New York, 1922.

In this day when hardly an hour passes in which no advance is made in deciphering of the once inscrutable inscriptions of Central America, it is gratifying to find a work which makes clear the significance of the quipu or knot record of the ancient Peruvians.

Because the results of the researches of Professor Leland Locke are of great importance, making his book one of the highest value to students of ancient Andean culture, it will be well to mention now certain blemishes which detract from the worth of the book. I refer to the matter of misprints. The book is as full of them as is the average South American publication. For example: on page 29 *Galerie*

Americain instead of *Galerie Américaine*; page 35, *Historie* instead of *Historia*; La Gasco, instead of either *la Gasca* or *Gasca*; *Fernandez*, instead of *Fernando*; the names of Don Diego de Ávalos y Figueroa and of his *Miscelánea Austral* are variously ill handled on pages 39, 57, and 73, and on the last mentioned page one sees *Garcio Lasso de la Vega* instead of *Garcilaso*. The great work of Cobo is cited on page 43, as *Histoire* (sic) *general de las Indias* instead of "*Historia del Nuevo Mundo*," and the date of the Seville edition is given as 1900 instead of 1890-1893. Having called the attention of the author to these errors, one may pass on to more interesting matters, expressing the hope that Professor Locke will not hereafter rely entirely on others for careful supervision of these minor details.

The text of the monograph really begins on page 9. First come some paragraphs relative to the ancient textile arts in Peru and to those conditions in that country which favor the preservation of specimens. Then, from page 12 to page 32, comes a succinct presentation of the material character of 45 quipus.

The account opens with a description of the kinds of knots used in the quipus. From the excellent drawing on page 13 we learn that the various figures are represented by the numbers of *complete twists* given by the cord around itself. Then, a little further on, we learn that groups of four cords (sometimes groups of some other number) were summed up by a top cord linking them together. In the case of the dependent cords, the hundreds come next to the main cord, then the tens, then the ones. In the case of the top cords, the thousands come next to the main cord, then the hundreds, and so on. In short, a study of the material presented by Professor Leland Locke on pages 16 *et seq.*, and in figures 3 and 4, reveals the fact that the ancient Andean had made considerable progress in arithmetical tabulation, though they probably did not rival the mathematical ability of the Maya.

The conclusions reached by Professor Locke are very important: The Quipu was usually used for numerical records; it was also probably used as an aid in memorizing lists of names and accounts of events; it was in no sense comparable with the *abacus* or with similar primitive aids to calculation; color was used as a secondary element in the quipu; and, finally, the quipu, however useful as a mnemonic aid to jog the memory, was in no sense writing or a substitute therefor. Unless a key to its subject matter was available, its decipherment was almost an impossibility.

In further support of his conclusions, Professor Locke cites on pages 33, 66, 37, account, old and modern, chronologically arranged, by means of which, we may recapitulate nearly all that has been said about quipus. On pages 60-61 Professor Locke gives some data relative to the use of knot-records elsewhere than in Peru. The reviewer regrets that these data were not amplified. From page 66 to page 71, Professor Locke discusses some interesting spurious quipus. Pages 72 to 84 are taken up with the extensive bibliography and indices prepared for the monograph by its writer.

The illustrations are numerous, excellent, and pertinent to the subject matter. There is a superb frontispiece and 59 equally good plates, to all of which Professor Locke makes appropriate reference in his text.

It is hard to imagine how anyone not frankly a "bad boy" of science will be able to dissent from the conclusions reached by Professor Locke. Some day, let us hope, we shall have the ideas of Dr. Julio Tello on the subject of the quipus. He is, or was three years ago, making a special study of the matter, and was referring very often to the works then already published by Professor Locke. When the work of Dr. Tello, none of whose monographs appear to be known to Professor Locke, comes out, we shall know all there is to be known about the quipu, for Locke and Tello between them will have covered the whole field.

PHILLIP AINSWORTH MEANS

INDONESIA AND OCEANIA

Anthropologische Bibliographie van den Indischen Archipelen van Nederlandsch West-Indie. J. P. KLEIWEG DE ZWAAN. (Mededeelingen van het Encyclopaedisch Bureau Afl. xxx.) 471 pp. Batavia, 1923.

Very few foreign scholars and not even many Dutch scientists have an adequate idea of the vast amount of literature concerning the anthropology, in its widest sense, of the insular region officially called Netherlands East India, and otherwise known under the names of Indian, Malay and Eastern Archipelago, Malaysia, Austronesia, Indonesia, Insulinde, etc. Even the list of works, Dutch and foreign, dealing mainly or exclusively with physical anthropology or somatology, and in a lesser degree with physiology, is a pretty long one. This is only fully realized when one peruses this bibliography, which

also includes Suriname [Dutch Guiana] and the Dutch Antilles [Curaçao, Aruba, etc.], by Prof. Kleiweg de Zwaan of Amsterdam. It purports to facilitate the researches of those who wish to get information about the physical characteristics, racial affinity, origin and related questions of the peoples inhabiting not only the Dutch Colonies but also the adjacent regions. The author has arranged the publications under review into six groups: (1) Magazines and periodicals; (2) articles and studies in which, besides other things, anthropological remarks can be found; (3) separate articles, exclusively or chiefly anthropological; (4) separate publications of varying character, in which also notes on anthropology occur; (5) publications concerning skulls and skeletons; (6) supplement, with additions up to the year 1922; and finally an index. In the main part the manuscript of the Bibliography was closed three years ago, but owing to various adverse conditions the work was only published recently. On account of the great distance between the Netherlands and the Colonies, Prof. Kleiweg de Zwaan could not correct the proof himself. Hence there are a great many awkward misprints throughout the work, for instance, the names of authors and of peoples are often distorted. But this is the fault of the proof-reader and of the former Encyclopaedisch Bureau and not of Prof. Kleiweg de Zwaan. Therefore the acknowledgement of the good care taken in publishing the work at Batavia with which the author closes his Introduction reads like mockery. On a slip of paper accompanying the book only six errata are mentioned. There is some grim humor in this, too, for the *very numerous* errata give an idea of the unpardonable negligence of the editor and printer. I don't know who is responsible for the spelling of Soeriname, Timoer, Hindhoc in place of the well known names of Suriname, Timor and Hindu. If it is a new departure "on a scientific basis," the somewhat bewildered reader should have been informed about it by the author or editor.

Approximately between fourteen and fifteen hundred titles of books and magazine articles are given. Prof. Kleiweg de Zwaan has undertaken the tremendous and in many respects ungrateful work of summarizing briefly the opinion of every author who has seen natives of the Dutch Colonies and written about them. Very many of these statements are superficial or second-hand, and meaningless from a scientific point of view. Equally valueless are the fantastic and absurd hypotheses of some of these authors about racial affinities, mixtures and migrations. Surely, with regard to these questions only

the opinion of trained physical anthropologists, based on methodical field observations, or the study of skeletal material has any value. As examples of the latter class of observers I mention a few well-known names: B. Hagen, P. and F. Sarasin, A. C. Haddon, Nieuwenhuis, Neuhauss, Gustav Fritsch, Pösch, Schlaginhaufen, Van der Sande, A. J. P. van den Broek, and last but not least Kleiweg de Zwaan himself. To specialists of this kind the bibliography ought to have been restricted. What Valentyn, Riedel, Zondervan, Blink, Jasper, the novelist Augusta de Wit, and many others of the same class have to say does not interest the professional anthropologist.

There are several omissions in the bibliography. I shall mention just a few: the somatological observations made during the voyage of the *S. S. Gazelle* by Dr. Husker, edited by R. Hartmann; those of Crevaux and Maurel on the Indians and Bushnegroes of Dutch and French Guiana. A word might have been said about the descriptions of the aborigines of Bali and Lombok by the well known artist and traveller W. O. J. Nieuwenkamp, and also his sketches, several of which have anthropological value. The same applies to the work of another artist, Mr. Hubert Vos, whose excellent types of Javanese are unrivaled. Several of the reviewer's publications have been overlooked. It is however quite natural that in handling such a mass of material the Bibliography hardly could be complete. The author himself frankly acknowledges it in the Introduction (p. 5). Many works and especially magazine articles, published in Spain, Portugal, America and the Philippines could not be consulted. The principal works however dealing with the physical anthropology of the Dutch Colonies and neighboring regions are doubtless given due mention. It is certainly meritorious that Professor K. de Zwaan, working under such trying circumstances, has nevertheless performed his gigantic task. All those who are interested in this subject owe him a vote of thanks.

H. TEN KATE

Hawaiian Stories and Wise Sayings. Collected and translated by LAURA S. GREEN. Edited by MARTHA WARREN BECKWITH. (Publications of the Folk-Lore Foundations, no. 3. Vassar College Field-work in Folk-Lore.) Vassar College, Poughkeepsie, New York, 1923. Pp. 1-65, preceded by 4 pp. of preface, 1 pl.

This little collection is a welcome contribution to Hawaiian folklore, especially as some of the tales are new and several are accom-

panied by the original Hawaiian texts, which have been sadly neglected in most other collections.

The paper is model in its arrangement. A preliminary statement of the various printed collections of Hawaiian myths and tales is succeeded by the preface. In the preface the editor relates the circumstances under which the tales were gathered and describes the careful and painstaking work of the translator, Miss Laura S. Green.

The tales are copiously annotated so that the reader unfamiliar with Hawaiian ethnology has no difficulty in following the thread of the stories. The origin of geographic features is related in a number of the tales, which imparts to them a degree of localization which enhances their ethnological value.

The "wise sayings" which occupy the eleven terminal pages of the paper are carefully segregated under a number of heads such as *place allusions*, *legendary allusions*, and *figurative sayings*. Not only do they possess a high intrinsic worth as gems of terse Hawaiian thought, but they will prove of great value when an intensive comparative study of such materials from all parts of Polynesia is made.

A few misspelled words, one of them in a heading, which escaped the proof-reader are the only imperfections which mar an otherwise laudable piece of work.

E. W. GIFFORD

AFRICA

A White Woman Among the Masai. MARGUERITE MALLETT. New York: E. P. Dutton, 1923. 228 Pp. \$7.50.

A traveller returned from foreign parts always gets an attentive ear for the narrative of his adventures. When the traveller is a woman who has spent considerable time in regions where women of her land rarely venture, her account is even more eagerly read. Such alone is the interest in the present volume for it contains nothing new for the anthropologist. The author's remarks on native customs, which are few and scattered, are given with such aloofness and lack of sympathy that one is inclined to put little faith in them. The notes on the Nandi are better on the whole than the comments on the Masai. The book furnishes interesting reading for the large clientele that gets vicarious pleasure out of travel accounts.

ERNA GUNTHER

MISCELLANEOUS

*Olympic Victor Monuments and Greek Athletic Art.*¹ WALTER WOOD-BURN HYDE. Carnegie Institution of Washington, 1921. XIX. 406 pp.

Histories of Greek art almost invariably fall into one or the other of two classes: those which are built up, fact upon fact, by long and laborious study of ancient texts and of the surviving monuments, and those which reflect the psychological reactions of enthusiasts in the presence of ancient masterpieces. The former type is exemplified by Overbeck's *Geschichte der griechischen Plastik*, the latter by the art-histories of Elie Faure. Rarely does a work present the product of a brilliant imagination chastened and restrained by thorough study of all the available evidence, although fortunately such works do exist as is shown, for example, by Furtwaengler's *Antike Gemmen*.

The *Victor Monuments* is clearly of the Overbeck order. No one will ever wish to read it from cover to cover, but every scholar will find it indispensable for reference and, furthermore, its authority is so great and its documentation so heavy that it will be serviceable for many years to come. There is little in the book to which one can take exception, since the method of the author is rather to make a résumé of previous discussion than to advance new and independent opinion. He does not hesitate, however, to declare for one or another of the divergent views brought under discussion, and these declarations are in themselves sane and refreshingly consistent. In his most important contribution, Hyde has made as good a case for the attribution to Lysippus of the "Head found in Olympia" as is warranted by our slender knowledge of the sculptors of the period; but one must remember that there were in this same age other sculptors of renown than Scopas, Praxiteles, and Lysippus, and doubtless also many real artists to whose memory fortune has been unkind.

Little is said in explanation of the technical development of types. Thus, in a chapter on "Victor Statues Represented in Motion," we read:

It used to be assumed that in Greek art motion statues developed out of the archaic "Apollo" type through the gradual freeing of legs and arms. Any such assumption is easily disproved by the fact that figures in motion exist, which date back almost as far as figures at rest.

Then follows little else than an enumeration and description of early statues that represent motion. Yet the way in which the Greek

¹ Printed by permission of the University of California Chronicle.

sculptor acquired freedom in the presentation of motion is a problem full of interest, and the following speculation may offer the key to its solution.

According as his aim was statuary or relief, the early worker in stone seems to have followed one or the other of two quite different techniques that are not adequately distinguished in our histories of ancient sculpture. In either technique his method was subtractive; that is to say, his chiseling was done directly on the block of stone which should become the finished work, and without the aid of any intervening model. Modern sculptors, using the additive method, build up a model in some plastic material, applying a bit here and there, reducing an angle or accenting some detail, but with the net result that, as compared with ancient statuary, roundness if not effeminacy is characteristic of the product.

In statue making, the ancient artist first outlined his figure on the block and then cut away all that lay outside his outline, throughout the whole depth of his material. The same process was repeated from the side, and thereby it arises that archaic Greek statuary is "composed" from two points of view, front and side. This technique is quite enough to account for the angularity of early statues in stone, and it may also be used, as Lermann has already used it, to account for the "Aeginetan smile" and the pop-eyes of the same early statues.

The technique of relief sculpture demanded a sketch on the flat surface of the slab which was to be worked. By chiseling back to a lesser depth here, a greater depth there, the artist realized in some degree the third dimension and, especially, he succeeded in adapting his work for the reception of color. The color was applied in flat tones, but the rounding of the figures introduced something of shading and made the relief more like a modern painting than was the ancient painting of the period, which made use of flat tones on a flat surface. The main differences between statuary and relief were, however, these, that the relief is conceived as a painting, to be viewed from the front and not from the side, and that the relief is carried by a background, so that more daring conceptions may be realized in it than are possible in the statue.

While the worker in bronze could not follow the subtractive method, but must first build up a model for casting, it should be evident that his art was profoundly influenced and modified by that of the painter and of the sculptor working in stone. It is indeed a

recorded fact that some sculptors were proficient in the three techniques of sculpture and in painting as well.

When we examine the Winged Victory of Delos and even the Discus Thrower of Myron, we are struck by the fact that these statues are composed from but one point of view. They are, then, to be conceived and interpreted, not as statues, but as virtual reliefs from which the background has been cut away. Given the impetus of statuary like these two examples, statuary that far excels the attempts of the Egyptians and Assyrians, is it any wonder that Greek genius, by its usual happy combination of methods and ideas, was eventually able to produce such marvelous figures as the Victory of Samothrace?

The *Victor Monuments* is copiously illustrated, but the illustrations are not always adequate since the engraver has not always succeeded in developing the intermediate tones so necessary to thoroughgoing study of style. Author and publishers should be commended for the careful proofreading of matter which is full of difficult citations in many tongues. As a whole the volume is undoubtedly the most scholarly and valuable contribution that America has made to the history of ancient sculpture.

OLIVER M. WASHBURN

A History of Magic and Experimental Science During the First Thirteen Centuries of Our Era. LYNN THORNDIKE. New York: Macmillan Co., 1923. 2 vols., pp. 835 and 1036. Price \$10.

The title of this book promises a culture history. But its seventy-two chapters each present only a digest of the learned works of the period, with never a connected discussion of the changes in thought. This is the more to be regretted in view of the enormous amount of labor that has gone into its compilation.

But will it not serve at least as a source book? The reviewer has no special knowledge of the period, but he is certain that it will not remedy this defect. Each chapter is little more than a catalogue of literary remains of a period, with a brief indication of the contents of many of the works. A more frequent use of excerpts would have done more to give us some notion of the kind of reasoning and the extent of knowledge, than all these statements that such and such a manuscript is more given to astrology than to Christian theology, etc. The book does describe the extent to which the early authors labored under magical beliefs, but it does not systematically indicate what changes took place in those beliefs.

In short it is not a history of thought, and does not permit us to construct one from its contents. Further, one wonders how much of a history of thought in Europe can be drawn up by a process which uses Greek and Arabic sources but incidentally, and entirely omits the vernacular literature.

LESLIE SPIER

SURVEY OF RUSSIAN LITERATURE

Publications of the Museum of Anthropology and Ethnology of the Russian Academy of Sciences, III, Petrograd, 1916.

S. M. SHIROKOGOROFF, Problems of the Physical Anthropology of Siberia.

After giving a brief history of anthropometrical investigations in Siberia, the author discusses in detail the actual methods of measurement, the application of the statistical method and its various deficiencies. At the end a summary of the results of anthropometry in Siberia is given and the most important gaps and needs are indicated.

B. E. PETRY, Neolithic Finds on the Shores of Lake Baikal.

GUDMUND HATT, The Artificial Formation of the Child's Head among Scandinavian Lapps.

Mr. Hatt describes this custom as the "formation of the head," not deformation, because the purpose was only to give a rounder shape to the already brachycephalic type of skull. The practice was not common, being applied only in those cases where the new-born child was more or less dolichocephalic. Usually the method was applied when the child was for the first time bathed. The head was carefully pressed with the hands, then bound with a handkerchief, a piece of cloth, or reindeer skin. The sort of cap (*kappe*) made of thick cloth or reindeer skin was made to fit the head very tightly. It was worn day and night by boys for the first two or three years, and by girls for ten or twelve years. The purpose of the Lapps was first aesthetic, because they considered the round head more beautiful, and second, hygienic, in order to protect the soft spot of the new-born baby.

Similar customs, are found, according to Mr. Hatt, in France, British Columbia, and among the Eskimo, Naskapi Indians, Bagago, Andaman Islanders, Huns, Ugrians, Finns, and Korels. It would be of considerable interest to learn if the Samoyed, who belong to the

same linguistic group as the Lapps, Ugrians, and Finns, also practise this custom.

L. STERNBERG, *The Ancient Cult of the Twins in the Light of Ethnology*.

Publications of the Museum of Anthropology and Ethnology of the Russian Academy of Sciences, iv, bk. 1. Petrograd, 1918.

S. M. DUDIN, *The Technique of Mural Drawing and Sculpture in the Ancient Buddhistic Caves and Temples of Western China*.

B. B. BARTOLD, *Concerning the Tale of Didona's Slyness*.

The author gives a few instances of the presence among Turkish tribes of Central Asia of the famous myth of Didona's slyness: The hero asks for a piece of land large enough to cover with an ox's skin; he then cuts the skin into strips with which he surrounds the land thereby covering a larger area.

S. OLDENBURG: *Short Account of "Peri-hon" and "Dua-hon" in Kuchar*.

An account of shamanistic performances of the natives of Turkistan.

I. I. ZARUBIN, *Material on the Ethnology of the Mountain Tadjik*.

The article deals with the ethnology of the Tadjik, an Iranian tribe of the Pamir.

B. E. PETRY, *The Ornaments of the Kudinsky Buriat*.

A very good article with illustrations of the most common motives of decorative art as found among the best-preserved portion of the Buriat.

N. A. VITASHEVSKY, *An Observation of the Yakut Shamanistic Performances*.

Description and analysis of two shamanistic performances, with a detailed explanation of the meaning of objects and incantations.

V. M. IONOV, *Materials for a Study of the Pre-Christian Beliefs of the Yakut*.

A summary of the pantheon of the Yakut.

S. E. MALOV, *Shamanism of the Sart of Eastern Turkestan*.

A short article giving the material on shamanism collected by the author in 1913-1915. Shamanism is still strong, because of its mixture with Islam; the incantations and procedures bear definite traces of Mohammedan influence. The main feature is the transplanting of the cause of sickness from the patient to the body of an animal or inanimate object.

Publications of the Museum of Anthropology and Ethnology of the Russian Academy of Sciences, IX. Petrograd, 1911.

M. S. ANDREEFF & A. A. POLOVTZOV, Material on the Ethnology of the Iranian Tribes of Central Asia: "Iškašim" and "Vakhan." *Ibid*, vol. XVI, Petrograd, 1913.

V. M. YONOFF: The Eagle in the Beliefs of the Yakut.

Ibid, vol. II, bk. 1.

E. K. PEKARSKI & V. P. ZVIETKOFF: The Life and Customs of the Aian Tungus.

Publications of the Museum of Anthropology and Ethnology of the Russian Academy of Sciences, II, bk. 2. Petrograd, 1914.

V. I. ANUCHIN, Shamanism of the Yenisei Ostiak.

Ibid, vol. IV, bk. 1. Petrograd, 1916.

V. M. YONOV, The Spirit, "Master of the Forests," in the Beliefs of the Yakut.

Proceedings of the Amur Section of the Russian Geographic Society. Vladivostok, 1922.

I. A. LOPATIN, The Goldi of the Amur, Ussuri, and Sungari Rivers. 370 pp., with 86 illustrations.

A very detailed account of the Goldi, one of the Tungusian tribes of Siberia, giving the general ethnology of the Goldi, their material and social culture, history and distribution.

EUGENE GOLOMSHTOK

SOME NEW PUBLICATIONS

Barnes, Harry Elmer. *Sociology and Political Theory*. New York: Alfred A. Knopf, 1924. 12 mo. cloth; 260 pp. \$2.00

Bender, H. H. *The Home of the Indo-Europeans*. Princeton: Princeton University Press, 1922. 57 pp.

d'Harcourt, R. Review of "The Population of Teotihuacan" (*La Geographie*, Sept.-Oct. 1923, p. 330).

Faure, Maurice. *Les Origines de L'humanité*.

Fleure, H. J. *The Races of England and Wales*. London: Ernest Benn Limited, 1924. 8 vo. Crown. With 13 half-tone plates. 5 s.

Gifford, Edward Winslow. *Tongan Place Names*. (Bulletin 6, Bernice P. Bishop Museum, Honolulu, 1923. 255 pp. 2 maps.)

Gunsaulus, Helen, C. *Japanese Costume*. (Leaflet 12, Field Museum of Natural History, Chicago, 1923.)

— The Japanese New Year's Festival Games and Pastimes. (Leaflet 11, Field Museum of Natural History, Chicago, 1923.)

Günther, Hans, F. R. *Rassenkunde des deutschen Volkes*. München: J. F. Lehmann Verlag, 1923. 516 pp. 14 maps. 537 ills.

Harrington, M. R. *An Ancient Village Site of the Shinnecock Indians* (Anthropological Papers, American Museum of Natural History, Vol. XXII, part V: 56 pp. 39 text figures. New York 1924.)

Harrison, H. S. *The Evolution of the Domestic Arts*. Part II [Basketry, Pottery, Spinning, and Weaving, etc.] Second edition. (Handbook, Horniman Museum and Library, London, 1924. 77 pp. Illus. 6d.)

Hinkle, Beatrice, M. *The Re-creating of the Individual; a Study of Psychological Types and their Relation to Psychoanalysis*. New York: Harcourt, Brace & Co., 1923. XIII, 465 pp.

Hrdlička, Aleš. *New Data on the Teeth of Early Man and Certain Fossil European Apes*. (American Journal of Physical Anthropology, Vol. VII, no. 1, Jan.-Mar. 1924, p. 109-132.)

Imbelloni, J. *Nota sobre los Supuestos Descubrimientos del Dr. J. G. Wolff en Patagonia*. (Revista de la Universidad de Buenos Aires, tomo LI, p. 39-51.)

Jeancon, J. A. *Excavations in the Chama Valley, N. M.* (Bulletin 81, Bureau of American Ethnology, Washington 1923. 80 pp. 65 pls.)

Koppers, Wilhelm. *Unter Feuerland-Indianern*. Stuttgart: Strecker & Schroder, 1924. VIII, 244 pp. 74 fig. 1 map.

Lewis, Albert, B. *Use of Sago in New Guinea*. (Leaflet 9, Field Museum of Natural History, Chicago, 1923.)

Maugham, R. C. F. *Native Land Tenure in the Timbuktu District*. (Journal of the African Society, Vol. 23, Jan. 1924: p. 125-130.)

Montandon, Raoul. *Bibliographie Generale des travaux palethnologiques et archeologiques*. Tome I-II and continuation. Geneva: Corraterie. \$10.

Moorehead, Warren K. *The Cahokia Mounds, Part I; A Report of Progress by W. K. M.; Part II: Some Geological Aspects by M. M. L.* (University of Illinois Bulletin, XXI, no. 6, Oct., 1923. 97 pp., 15 figs., 21 pls., 1 map. \$1.50.)

Morton, Dudley J. *Evolution of the Human Foot*. (American Journal of Physical Anthropology, Vol. VII, Jan.-Mar. 1924.)

— *Evolution of the Longitudinal Arch of the Human Foot*. (Journal of Bone and Joint Surgery, Jan. 1924, p. 56-90.)

Mosher, Clelie Duel. *Some of the Causal Factors in the Increased Height of College Women*. 3rd Note. (Journal of the American Medical Association. Vol. 81. p. 535-538.)

Nuttall, Zelia. *Two Remarkable California Baskets*. (Quarterly of the California Historical Society. Vol. II, 1924. p. 341-343.)

Olden, Sarah Emilia. *Shoshone Folk Lore*. Milwaukee: Morehouse Publishing Co., 1923. \$1.60.

— *The People of Tipi Sapa*. Milwaukee: Morehouse Publishing Co., 1923. \$1.60.

Roullion, Andre. *Lesions Osseuses prehistoriques de la Vendée*. Angers: Imprimerie du Commerce, 1922. 260 pp.

Sullivan, Louis R. *Marquesan Somatology and Comparative Notes on Samoa and Tonga*. (Memoirs of the Bernice P. Bishop Museum, Vol. IX, no. 2. Honolulu, 1923. 108 pp. 5 pls.)

Will, George F. *Archeology of the Missouri Valley*. (Anthropological Papers of the American Museum of Natural History, Vol. XXII, part VI. New York, 1924. 59 pp. 14 figs. \$.50.)

Wissler, Clark. *Comparative Data on Respiration and Circulation among Native and Foreign Born Males in New York City*. (Anthropological Papers of the American Museum of Natural History. Vol. XXIII, part VI. New York, 1924. 48 pp. 2 figs. \$.50.)

_____. *Distribution of Stature in the United States*. (Scientific Monthly Vol. XVIII, no. 2. Feb. 1924. p. 129-143.)

Young, Kimball. *The History of Mental Testing*. (Pedagogical Seminary. Vol. 31. Mar. 1924. p. 1-48.)

BRIEF COMMUNICATIONS

THE TEACHING OF ANTHROPOLOGY

ANTHROPOLOGY, at least in the good old classical sense, is the science of man. It attempts to envisage the human race as an entity.

Several specialized departments of knowledge are concerned with civilized man: sociology, history, economics, politics, psychology. If they give us something of man outside of civilization it is largely by way of illustration, incident, or supplementary information.

Anthropology has fallen heir to what is left of mankind when these special sciences have treated their fields, and it, in turn, is little inclined to poach upon their preserves. So far as it studies phases of civilization this is mainly for illustration, for supplementary material, or for guidance in approach, save in so far as it tries to make of civilization and savagery an evolutionary scheme exhibiting some presumed course of development. In the main, its field is the life of the non-civilized peoples, using "civilization" to apply to the culture of Western Europe and its immediate antecedents about the Mediterranean.

To understand the non-European peoples, specialization in problem, field, point of approach, are almost as essential as when the student of European civilization approaches his task. The historian does not pose as economist, sociologist, and so forth, but finds that the historical approach is problem enough for a lifetime, indeed far too large a problem. Similarly with the anthropologist.

Anthropological data have been accumulating with such rapidity during recent decades that no one in the present century has attempted a conspectus of the field of general anthropology; we may doubt whether any one would make a success of such an attempt.

If this be true, prevailing methods of instruction should be modified in view of the new knowledge and the new needs. To a certain extent the divisions of the field must be arbitrary, for if anthropology is a science it is an integrated whole and to divide it into parts is to disarticulate it, making into dismembered portions what should be a functioning whole. Even so, in order to understand

we must analyze and study part by part as well as observe the parts in their functioning interrelations. When we view it analytically—six important fields can be recognized: physical anthropology; prehistoric archaeology; technology; ethnology and ethnography; linguistics and mythology; social anthropology. Although anthropology deals with non-European peoples and non-European fields of knowledge, it does not follow that the preparation for an understanding of its data must come from non-European disciplines. On the contrary, in many cases, it must come from fields of European knowledge.

The preparations which are most likely to help the student in the respective fields to which we have referred are probably the following:

(1) *Physical anthropology*. The student preparing for this field should have a training in paleontology with something of the principles of geology, as a means of properly orienting man in the animal kingdom and in the time perspective. That will give him man's place in nature. Man's place in the animal world will be made more specific by a course in comparative anatomy, which should give the immediate setting for the problems of human structure. Then comes human anatomy, which, of course, is essential to an understanding of man's structure; anthropometry; and biometry. The principles of heredity are essential. Statistics the student needs in increasing measure as a device for presenting material and for interpretation of data. He is then prepared for physical anthropology proper, including a study of the characteristics of prehistoric and of contemporary man.

That this gives the student the equipment needed for his work becomes evident when we look into the nature of the problems with which he must deal. If any corroboration is needed, corroboration is ample in the history of physical anthropology. Anatomists, biometrists, statisticians, biologists, constitute almost the complete list of those who have advanced the science: Blumenbach, Retzius, Virchow, Rudolph Martin; Broca, Topinard, Boule; Sir William Turner, Cunningham, Arthur Thomson, Duckworth, Keith, Knowles; Morton, Dwight, Boas, Hrdlička, Wissler, Spier, Sullivan, Oetzel.

(2) *Prehistoric archaeology*. The materials with which the student of prehistoric archaeology deals make necessary a grasp of paleontology and of geology; for evidence of the age of man and of his industries is directly dependent upon interpretation of data falling within one or the other of these two fields.

With these instruments of approach he is prepared to proceed with prehistoric archaeology proper. A good grounding in classical archaeology will be of infinite value in his grasp of the principles involved and will widen the perspective from which he views the problems of his special field. He should, of course, know the stone and metal work of contemporary primitive peoples.

(3) *Technology*. The proper introduction to technology is prehistoric archaeology, the earliest phase of technology of which we have record. There should follow, if it has not preceded, classical archaeology, including the industrial life of the Mediterranean cultures. The student is then equipped to embark on technology proper. Any thorough grounding in his field will involve a knowledge of European handicrafts and industries, particularly a knowledge of their development. With technology should be included primitive art, for the latter can not be understood by one ignorant of the technical processes involved, and there are many problems of interrelation. An understanding of the principles of aesthetics and of the psychology of art will equip the student for explorations in a field of primitive culture which has as yet been scarcely touched.

(4) *Ethnology and ethnography*. The background is geography, physical, economic and industrial, and human. Human geography should include the distribution of the physical types of man and an account of the culture areas, neither of these a small problem. Along with the geography of culture areas should go the geography of technological devices, of social life, and of the various outstanding forms of culture. Amalgamation, assimilation, and culture diffusion are among its problems.

As an aid to understanding these an account of the peoples of Europe, of human migrations, immigrations, and national groups in the New World and in the Old, should be included.

(5) *Linguistics and mythology*. Phonetics and Indo-Germanic linguistic structure constitute the background for the introduction to the speech of primitive peoples. Along with linguistics should go literature and mythology. The psychology of language will be an aid, and comparative mythology can not be omitted. Our present information of primitive language is limited mainly to structure, phonetics, and linguistic relationship; little has been done to discover its psychology or its literary forms and nuances.

(6) *Social anthropology*. The introduction lies through the principles of sociology, including social theory, social structure, the

forms of society in the Mediterranean cultures and in European civilization. Psychology is a valuable handmaid and social psychology an indispensable guide to many phases. An understanding of contemporary social life and of social ideals in modern life is desirable.

Social anthropology is concerned with forms of social life: with social organization, political structure, ethics, religion. Here, perhaps should be included an account of the knowledge and beliefs of primitive man, his nature philosophy, native psychology, theology and so forth. Comparative religion is a valuable adjunct.

Anthropology is not taught in any comprehensive way outside of the larger universities. In all of them it is possible to secure instruction in the branches mentioned, in many cases very thorough instruction. While this might not be precisely the kind of training in those respective lines which the anthropologist would find most valuable, the fact remains, if we are correct, that it would be much more valuable to the student than any other kind of training available.

The details of curricula might prove a temporary stumbling-block but certainly should prove no serious obstacle. They could be arranged if faculties desire to meet the needs of students, and if this desire is stronger than the desire to maintain a system and "departments" of water-tight complexion.

Would the demands imposed upon students of anthropology be too great? As courses are now arranged, in some cases they would. But it would not be asking too much provided courses were revised in such a way as to meet the particular needs of students who may desire the fundamentals of a subject without taking up in detail the facts or the technique. If the work of these courses were dovetailed so that they supplemented one another and had a bearing on a common problem, the task would not exact more of the student than we now require of him, and it would yield him infinitely more of systematized knowledge, wherein each field would shed light upon the field of main interest.

The professional anthropologist can not give this broader training. He has been brought up in another school wherein it was not attempted. The correlations have not been worked out, and the professional anthropologist, unassisted, can not work them out. Yet these correlations are a crying need. There is no logical obstacle to their being made, given time and determination on the part of those who will equip themselves to make them.

We have said that the historian is not economist, sociologist, and so forth, but devotes himself to a given field. True; but also he remakes history to about the extent that he understands current economic theory, political theory, social psychology, and other phases of contemporary thought. Much the same holds of the anthropologist. Under the stimulus of Darwinism the theory of evolution made—or ruined—physical anthropology; it gave the turn to social anthropology; out of Indo-Germanic linguistics and phonetics grew the linguistics and phonetics of primitive speech and language. New theories, whether in biology, geology, social psychology, psychology, give us new methods of approach to anthropology and foist new problems. The technique for dealing with one or another phase of the anthropological field comes, often, and sometimes must come, from without the field of anthropology proper. A knowledge of the numeral systems of primitive peoples will be of little assistance in interpreting or compiling statistical data: a knowledge of physical anthropology helps little in the field of linguistics.

Knowledge has grown, new methods have come into vogue, the needs of the day are far other than they were a generation ago. Our manner of presenting the material, the perspectives and techniques which we offer the student, must change. Unless they conform to these new occasions which teach new duties, they do not give him adequate equipment.

I have spoken of the problem of teaching as though other subjects existed for the sake of anthropology students. This, of course, is contrary to the facts. So far as one's aim is mastery of the field of anthropology the subservience of other subjects is desirable. Yet most of those students who enroll in anthropology courses are not interested primarily in anthropology but take it as subsidiary to some other interest. (We must limit our considerations to those students who have interests.) It seems clear, then, that anthropology should, if you please, cater to those major interests. It will become master by serving intelligently,—the only conditions under which mastery should be craved.

To the student of history, or of geology, or of anatomy, or of language and literature, anthropology should have something worth while to contribute. It should help fill out the field of any one of these students so far as that field broadens into regions where the anthropologist feels at home.

This is to recognize that anthropology has duties and opportuni-

ties in addition to preparation for technical work in its special field. A proper recognition of such duties and opportunities should be counted into it for good. They need not, and of course must not, be detrimental to its soundest scientific interests.

In order to make concrete the arrangement of courses which would give a student a fruitful orientation of his field in undergraduate work, I have taken the announcement of courses in one of our universities and find the curriculum of that institution would permit the following arrangement of courses in junior and senior year, with prerequisites in freshman and sophomore year, as indicated:

ETHNOLOGY.

- Prerequisites: History of Ancient and Mediaeval Scandinavia
History of the Near East (ancient and modern)
- Major Sequence: History of Europe, 1848-1914
European Backgrounds of American Immigration
American Immigration
History of Immigration

LANGUAGE AND MYTHOLOGY.

- Prerequisites: Two years (or more) in college of one ancient and one modern language.
Scandinavian Mythology.
Greek Mythology
- Major Sequence: Comparative Phonetics
Science of Language
History of Scandinavian Languages
History of German Languages

PHYSICAL ANTHROPOLOGY.

- Prerequisites: Zoology
Comparative Anatomy
Geography
Geology
Paleontology
Human Anatomy
Psychology (human and animal behavior)
- Major Sequence: Genetics and Eugenics
Calculus
Mathematical Theory of Statistics

PREHISTORIC ARCHAEOLOGY

- Prerequisites: Geography
Geology
Paleontology
- Major Sequence: Ancient History

SOCIAL ANTHROPOLOGY

- Prerequisites: Socio'ogy
 Social Statistics
 History of Ancient and Mediaeval Scandinavia
 Greek Literature and Social Life
- Major Sequence: South American Life and Institutions
 Social Psychology
 Social Organization
 Social Progress
 Psychology
 Greek History
 Roman History

TECHNOLOGY AND ART

- Prerequisites: Economic History
 Principles of Economics
 Elements of Architecture
 History of Architecture
 Greek Sculpture
- Major Sequence: Economic History of Europe 1300-1750
 History of Architecture and Painting

Any such arrangement must to a certain extent be formal; the content may not be so closely interrelated as the titles would imply. But that is an objection applying to any arrangement of courses, and some arrangement is made by student, instructor, or faculty. Can not the choice be directed with a purpose in mind, and must not that purpose imply, at least, a relation between the various subjects pursued? Otherwise the student's learning is not likely to be cumulative, it will be merely one thing and another.

Nor do I suggest that the above arrangement is the ideal. One must work with the materials at hand, and I have merely indicated possibilities inherent in courses which are now being offered in a given institution. These courses, probably, would not be duplicated in another institution, but each institution has its own possibilities.

The problem of making the best use of available educational opportunities deserves the attention of anthropologists whose pursuits fall in academic fields. Moreover, it is the concern to all who have an interest in the fate of anthropology.

WILSON D. WALLIS

HOUSES OF THE ALASKAN ESKIMO

FOR some years the type of house reported from the Eskimo region in Alaska by Murdoch, Nelson, and other modern investigators, has

seemed to me to offer a problem. The nature of the house construction does not conform to what, *a priori*, would be expected in the area. It has always seemed to me to be anomalous. It seemed impossible to fit it into any scheme which would account for various types of house construction in North America as a whole. On two or three occasions I have attempted to deal with the distribution of dwellings as a geographical problem.¹ It has always appeared to me that the distribution of *underground* houses in the northern part of the New World and also of the Old World, was particularly illuminating. This type of structure is built over a deep excavation, is made of wood, and has only one opening, which is in the roof, and into which one descends by means of a ladder. This opening serves both as an entrance, and as a smoke-hole.

The distribution of these structures, as worked out from references in the literature, is fairly continuous over a considerable area in northeastern Asia, and over a very large part of western America, with a hiatus in the American side in the region of Behring Strait. The types of houses used on the Asiatic side of the north Pacific, and in an extended region from the latitude of *southeastern* Alaska to that of California, on the American side, are so similar that no one can avoid, as an inference, the idea that one form of structure has spread from one place to another. The modern houses of western Alaska do not fit in.

The recent authorities on the western Eskimo report structures that refuse to conform to expectancy. Nelson for example in his paper on the Eskimo about Behring Strait,² pictures the native dwellings there as made of timber, buried in the ground, and covered with earth, with a tiny hole for the escape of the smoke. Entrance, however, is through a tunnel, from the side; and the interior arrangements are those of the typical snow huts, so much pictured and spoken of, as found among the Eskimo of Baffin Land and Greenland. This interior arrangement is conspicuously different from the arrangements within the typical underground timber house. Notice should be taken, for example, of the way in which the entrance passage comes up

¹ Native houses of Western North America, T. T. Waterman and Collaborators; Museum of the American Indian, Heye Foundation, Indian Notes and Monographs, 1920; Dwellings of the North American Indians, Geographical Review, November, 1923; Some Conundrums in Northwest Coast Ethnology. American Anthropologist, n.s. vol. 25, 1923.

² See Smithsonian Institution, Bureau of American Ethnology, Eighteenth Annual Report.

through the floor, the presence of a sleeping-bench at one side of the house, and the position of the stone lamps, beside the entrance. The two domiciles, the Alaskan Eskimo house and the widely spread "underground house," hardly approach each other closely enough for comparison. Almost the only point they have in common is that they are both covered in with earth.

The Aleut house of modern times is also "unconformable." We ought by the laws of probability to find on this chain of islands, underground dwellings of a typical pattern, for the islands lie directly between two areas where pit-dwellings or underground houses with entrance through the ceiling are common. The islands in fact occupy the very area over which the diffusion of such dwellings presumably took place. Yet the houses there today are most unsatisfactory for comparison. It is accordingly of some interest to ask if the Alaskan and Aleutian houses have always been as they are pictured by Nelson. Luckily, some earlier explorers in this region supply us with admirable evidence on this point. The region was first visited by Captain Cook. The "Atlas" accompanying his volume of "Voyages" contains several illustrations of Eskimo and Aleut dwellings. It is charming to observe that these older structures (sketched in the year 1792) are underground houses exactly like those reported as still existing in Kamchatka and British Columbia. They are complete and typical in every detail. In floor-plan they are circular, in the roof is a large smoke-hole, and through this smoke-hole leads a ladder, which the people ascend when they want to sally forth from the structure.

The explanation of the present Aleut house seems to be that it has simply been modified by the contact of the Aleuts with the Russians, the Aleuts having been for a long time more than half Europeanized. It is perfectly well known that the aboriginal culture of the Aleuts has vanished, for the most part, completely off the earth. Little or nothing of aboriginal character is found today except language. The house of the Behring Strait Eskimo and other western Eskimos has fallen, curiously enough, not under the influence of the Russians, but under the influence of the *eastern* Eskimo. It was long ago established that the *typical* Eskimo culture spread from a center near Hudson's Bay. It seems clear that this migration of culture has persisted until almost the present time, the Alaskan Eskimo dwelling having been affected since Cook visited the region. The Alaskan dwellings figured by Nelson and Murdoch represent, then, an underground house modified by ideas recently imported from the

Eskimo of the region about Hudson Bay. We may safely regard these Hudson Bay and Greenland dwellings as a typical Eskimo invention. Whether built of snow, or of rock (and hundreds of the latter may be found) they are a characteristic Eskimo device, and like the remainder of the true Eskimo culture, are either the outright invention of this remarkable people, or else so made over by their peculiar environment and the peculiar genius of the Eskimo, as to be only remotely related to the houses of other living peoples.

T. T. WATERMAN

DISCUSSION AND CORRESPONDENCE

A BELLACoola, CARRIER, AND CHILCOTIN ROUTE TIME RECORDER

THE following item was given me on June 17, 1922, by Joshua Moody, a Bellacoola Indian, apparently a full-blood, about 54 years of age. It was corroborated voluntarily on August 8, 1922, by the late Captain Schooner, also a Bellacoola Indian, apparently full-blood, about 74 years of age. The fact that Joshua and Schooner were not on good terms and that Schooner did not know that I had already heard of the item, strengthens the corroboration. Neither Indian understood English, and the material was taken in Chinook jargon.

A sort of primitive sun-dial was sometimes set up by a Bellacoola Indian traveller to record for the benefit of those following him the time which had elapsed since he had left. This was used only where one followed another, not as a true sun-dial to tell the time of day. The Carrier and the Chilcotin Indians also used it. Joshua did not know which tribe originated it.

This time recorder consisted of a twig made into a circular hoop about six inches in diameter, by twisting the ends together, and fastened firmly to a slanting stick stuck up in the smooth earth. The Bellacoola, who so commonly travelled up and down the Bella Coola river, frequently put one of these upon the sandy river beach. The more or less circular shadow of the hoop was marked in the soil, and the distance that it had travelled from the mark indicated how long the recorder had been standing.

If the one following was travelling in a river canoe and saw that the shadow was near the mark, his canoe party might pole hard in an effort to catch up, but if the shadow were far away he knew that it was probably useless to try to overtake the one ahead.

The distinctive character of this time recorder may possibly be useful in the solution of the problems of distribution.

HARLAN I. SMITH

FURTHER REMARKS ON THE ORIGIN OF THE SO-CALLED DREAM DANCE OF THE CENTRAL ALGONKIANS

In the *American Anthropologist*, N.S., 25: 277, 278 I pointed out that B. J. Armstrong (*Early Life among the Indians*, chapter X: 156

et sq.) interviewed the Sioux girl in 1878 (spring) who founded the dance. According to her story she belonged to the Sioux and was of the band that was massacred by Custer about May, 1876; and that she had been commanded by the spirits to teach the new dance. From this I concluded that the ritualistic origin myth was substantiated as history. Skinner, *American Anthropologist*, N.S., 25: 427, 428 challenges this; and states that he has been repeatedly informed by the Menomini that the ceremony was introduced to them by the Prairie Potawatomi as early as 1862. According to Skinner the timorous agent wired to Washington for troops to put down the outbreak, and that troops were ordered at once to the spot; and on the arrival of the soldiers the Menomini took to their heels; but the commanding officer on learning the nature of the dance requested the troops to be withdrawn. Skinner also adds that "the Government removed the agent on receipt of the officer in command of the soldiers."

It seems incomprehensible to me why Skinner accepts the statements of his Menomini informants in preference to those of the founder of the dance, without at least making a serious effort to substantiate what they have to say. And this is precisely what Skinner has not done. He apparently did not see that the statements made by the Menomini were of such a nature as to be easily verified, if correct. If he will consult the report of the Commissioner of Indian Affairs for 1862, he will find that the agent speaks very highly of the Menomini Indians, no mention being made of the disturbance referred to; and if Skinner will consult the reports for the next few years, he will find that the agent was not dismissed. Furthermore the Bureau of American Ethnology has been informed by the Adjutant General of the U. S. Army that there is no record of the federal troops being on the Menomini reservation in 1862. So I do not think it can be maintained that Skinner's informants were entirely truthful, to put it mildly. Furthermore, if Skinner will consult the report of the Commissioner of Indian Affairs for 1878 he will see there was a "Wisconsin scare" in that year which tallies with the date given by Armstrong. Again, the present Commissioner of Indian Affairs has been good enough to give the Bureau of American Ethnology copies of much of the correspondence bearing on the "Wisconsin scare" from which it results that a good part of the disturbance was caused by the introduction of "this new Sioux dance which is said to be a religious institution."

TRUMAN MICHELSON

THE LINGUISTIC CLASSIFICATION OF RUPERT'S HOUSE AND EAST MAIN CREE

ON p. 457 of the *American Anthropologist*, N. S., vol. 25, Professor Speck states:

For dialectic reasons the Rupert House and East Main Indians should be identified with the Mistassini and Montagnais.

Speck apparently overlooks the fact that years ago I demonstrated that the so-called Rupert House Cree really was a Montagnais dialect: see the *28th Annual Report of the Bureau of American Ethnology*, pp. 247, 248; and *Current Anthropological Literature*, vol. I, p. 190. For the second proposition see p. 102 of *Explorations and Field-Work of the Smithsonian Institution in 1923* (in press). Rigorous proof may be found on p. xi of Watkin's *Dictionary of the Cree Language*.

TRUMAN MICHELSON

THE LINGUISTIC CLASSIFICATION OF PEQUOT-MOHEGAN

On page 404 of the second edition of Wissler's *American Indian* Pequot(-Mohegan) is still listed as an Algonquian language of uncertain type. If Dr. Wissler will consult pp. 56, 57 of the *International Journal of American Linguistics*, vol. 1 (1917) he will find that I have shown that Pequot-Mohegan belongs with the Natick division of Central Algonquian languages.

TRUMAN MICHELSON

ERROR AND THE GENESIS OF TRADITION

In the first edition of his *Organic Evolution*, Lull gives 1894 (instead of 1891) as the year in which Dubois found Java man. This error has been reproduced in subsequent editions so far as I have been able to consult them. In volume I of the *Outline of Science* (1922 edition), J. Arthur Thomson gives 1894 as the date in which Dubois found the Java remains. The chapter contains a reference to Lull's *Organic Evolution* and one suspects that the error in date has been copied from Lull. In Joseph Déchelette, *Manuel d'archéologie*, I, 275 (Paris 1908) 1894 is given as the year in which Dubois found Java man, though a footnote on that page correctly gives 1894 as the year in which Dubois's account was published in Batavia. Lull may be copying from Déchelette, with whose work he was familiar. In *Man's Prehistoric Past* (1923), Wilder gives 1894 as the year in which Dubois found the Java remains. There is internal evidence of acquaintance

with the work of Lull above referred to. Our assumption is that the error was borrowed from Lull. In McCabe's translation of Hermann Klaatsch, *Evolution and Progress of Mankind* (New York 1923), we find the date 1894 given in two chapters, (on page 108 and on page 265) as the year in which Dubois made his find. Presumably the error has been inserted by the translator, though I have not been able to consult the original.

We have no inclination to harp at a mere typographical error. Yet if the year is worth mentioning it is worth recording correctly. The myth has lasted long enough and has spread far enough. In this careless perpetuation of error lies some lesson for the anthropologist: the perpetuation of the error shows how imitation may give rise to tradition. The views of those who hold to 1894 as the year on which Dubois found Java man are greatly strengthened by the corroborations which three biologists of as many different national schools give to Lull's assertion. Should the source material disappear we might have a shift in historical tradition arising from mere accident,—the 94's versus the 91's. Thus anthropological literature itself helps to perpetuate traditions which the anthropologist must disentangle. So long as the source material is at hand this would seem easy; but once it is gone and only secondary materials are at hand, the possibilities for making history loom large.

WILSON D. WALLIS

TOTEMISM AND THE A. E. F.

MANY modern anthropologists discount the supposed differences in the mental processes of civilized and uncivilized peoples and hold that the psychological factors which have controlled the growth of the so-called primitive cultures are still at work in modern society. It is difficult to obtain evidence on this point, and a record of the development in the American army of a series of beliefs and practises which show a considerable resemblance to the totemic complexes existing among some primitive peoples may, therefore, be of interest. The growth of one of these pseudo-totemic complexes can be fully traced in the case of the 42nd or Rainbow Division. The name was arbitrarily chosen by the higher officials and is said to have been selected because the organization was made up of units from many states whose regimental colors were of every hue in the rainbow. Little importance was attached to the name while the division was in

America and it was rarely used by enlisted men. After the organization arrived in France, its use became increasingly common, and the growth of a feeling of divisional solidarity finally resulted in its regular employment as a personal appellation. Outsiders usually addressed division members as "Rainbow," and to the question "What are you?" nine out of ten enlisted men would reply "I'm a Rainbow." This personal use of the name became general before any attitude toward the actual rainbow was developed. A feeling of connection between the organization and its namesake was first noted in February, 1918, five to six months after the assignment of the name. At this time it was first suggested and then believed that the appearance of a rainbow was a good omen for the division. Three months later it had become an article of faith in the organization that there was always a rainbow in the sky when the division went into action. A rainbow over the enemy's lines was considered especially auspicious, and after a victory men would often insist that they had seen one in this position even when the weather conditions or direction of advance made it impossible. This belief was held by most of the officers and enlisted men, and anyone who expressed doubts was considered a heretic and overwhelmed with arguments.

The personal use of the divisional name and the attitude toward the rainbow had both become thoroughly established before it began to be used as an emblem. In the author's regiment this phase first appeared in May, when the organization came in contact with the 77th Division which had its namesake, the Goddess of Liberty, painted on its carts and other divisional property. The idea was taken up at once, and many of the men decorated the carts and limbers in their charge with rainbows without waiting for official permission. As no two of the painted rainbows were alike, the effect was grotesque and the practice was soon forbidden. Nevertheless it continued, more or less surreptitiously, until after the armistice, when it was finally permitted with a standardized rainbow.

The use of rainbows as personal insignia appeared still later, in August or September. The history of the development of shoulder insignia in the American army is well known and need not be given here. The idea apparently originated with the Canadian forces, but the A. E. F. received it indirectly through one of the later American organizations which had adopted it before their arrival in France. The use of such insignia became general in the rear areas before it reached the divisions at the front. The first shoulder in-

signia seen by the author's regiment were worn by a salvage corps and by one of the newer divisions. This division was rumored to have been routed in its first battle, and it was believed that its members were forced to wear the insignia as punishment. The idea thus reached the 42nd Division under unfavorable auspices, but it was immediately taken up and passed through nearly the same phases as the use of painted insignia on divisional property. The wearing of shoulder insignia was at first forbidden by some of the regimental commanders, but even while it was proscribed many of the men carried insignia with them and pinned them on whenever they were out of reach of their officers. They were worn by practically all members of the division when in the rear areas, and their use by outsiders, or even by the men sent to the division as replacements, was resented and punished. In the case of replacements, the stricture was relaxed as they became recognized members of the group.

All the other army organizations which were in existence long enough to develop a feeling of group solidarity seem to have built up similar complexes centering about their group names. The nature of some of these names precluded the development of the ideas of the namesake's guardianship or omen giving, but in such cases the beliefs which were associated with the rainbow by the 42nd Division were usually developed in connection with something other than the group namesake. In some organizations the behavior of an animal mascot, or even of an abnormal person, was considered ominous. In one instance a subnormal hysteric acquired a reputation as a soothsayer and was relieved of regular duty by the other enlisted men on condition that he foretell the outcome of an expected attack. The successive stages in the development of these complexes were not always the same as in the case of the 42nd Division. Many of the later organizations seem to have taken over such complexes with little change except the substitution of their namesake for that of the group from which they borrowed.

By the end of the war, the A. E. F. had become organized into a series of well defined, and often mutually jealous, groups each of which had its individual complex of ideas and observances. These complexes all conformed to the same general pattern but differed in content. The individual complexes bound the members of each group together and enabled them to present a united front against other groups. In the same way the uniformity of pattern gave a basis for mutual understanding and tolerance and united all the groups against persons or organizations outside the system.

The conditions in the American army after these group complexes had become fully developed may be summarized as follows:

- (1) A division of the personnel into a number of groups conscious of their individuality;
- (2) the possession by each of these groups of a distinctive name derived from some animal, object or natural phenomenon;
- (3) the use of this name as a personal appellation in conversation with outsiders;
- (4) the use of representations of the group namesake for the decoration of group property and for personal adornment, with a taboo against its use by members of other groups;
- (5) a reverential attitude toward the group namesake and its representations;
- (6) in many cases, an unformulated belief that the group namesake was also a group guardian capable of giving omens.

Almost any investigator who found such a condition existing among an uncivilized people would class these associated beliefs and practices as a totemic complex. It shows a poverty of content when contrasted with the highly developed totemism of the Australians or Melanesians, but is fully as rich as the totemic complexes of some of the North American Indian tribes. The main points in which it differs from true totemism are the absence of marriage regulations, of beliefs in descent from, or of blood relationship with, the totem, and of special rites or observances to propitiate the totem. Each of these features is lacking in one or another of the primitive complexes which are usually classed as totemic and one of the most important, marriage regulation, is clearly a function of the clan or gentile system of organization and occurs in primitive groups for which totemism can not be proved.

It seems probable that both the A. E. F. complexes and primitive totemism are results of the same social and supernaturalistic tendencies. The differences in the working out of these tendencies can readily be accounted for by the differences in the framework to which they have attached themselves and in the cultural patterns which have shaped their expression. In the army, the military unit offered a crystallization point for these tendencies, and this precluded the development of marriage regulations or of a belief in the common of the group. The American culture pattern stimulated the development of the eponymous and decorative features, but offered no formulae for the rationalization of the relation felt to exist between

the group and its namesake, or for the development of observances for the namesake's propitiation. In primitive groups, on the other hand, the same tendencies usually crystallized about a clan or gentile system, and the marriage regulation features of this system became incorporated into the complex. Membership in the clan or gens was based on common descent, and in a group which drew no clear line between mankind and the rest of nature, the idea of blood relationship provided a convenient formula for the explanation of the group-namesake relation. Animistic or polytheistic concepts, and the existence of observances for the propitiation of a number of supernatural beings, afforded a pattern for the development of religious attitudes and special observances in connection with the namesake.

Even if we are willing to admit the essential unity of the tendencies which produced the army complexes on one hand and the totemic complexes on the other, it does not follow that the observed development of the army complexes will throw much light on the history of primitive totemism. Even in the army no universal rule of evolution was evident, for although the starting-points were always the group and name, the other features appeared in different order in the various units. The ease and rapidity with which the army complexes were developed suggests that the tendencies underlying them were deep-seated and only awaited a chance for expression. The importance of diffusion in the growth of these complexes is suggestive, and the army conditions may afford a clue to the true significance of some totemic phenomena. The often quoted example of the Australian who declared he was a kangaroo is a case in point. The author repeatedly heard soldiers declare that they were sunsets, wild cats, etc. and it would have required a good deal of questioning to obtain any coherent explanation of the relation which they felt existed between themselves and their namesakes. Such a cross-examination would have been impossible with the limited vocabulary of a trade jargon and very difficult with an ordinary interpreter. Although the army attitudes and practices were definite enough, their background was emotional rather than rational and the average soldier never attempted to formulate the ideas underlying them. Explanations elicited by questioning would be made up on the spur of the moment and would represent only his individual opinion. It seems probable that in primitive groups also a whole series of attitudes and practices could be developed without the individual feeling any need for their rationalization until he was confronted by some anthropological investigator.

RALPH LINTON

PROCEEDINGS OF THE CENTRAL SECTION OF THE
AMERICAN ANTHROPOLOGICAL ASSOCIATION
ANN ARBOR, MICHIGAN, MARCH 28 AND
29, 1924

The third annual meeting of the Central Section of the American Anthropological Association was held in conjunction with the Middle West Branch of the American Oriental Society at the University of Michigan, Ann Arbor, Michigan, March 28 and 29, 1924.

ANNUAL BUSINESS MEETING, MARCH 29, 9:15 A.M.

The following reports were read and accepted:

REPORT OF THE SECRETARY

The proceedings of the second annual meeting of the Central Section of the American Anthropological Association were published in the *American Anthropologist* for April-June, 1923.

No special meetings of the Section nor meetings of the Executive Board were held during the year.

The membership of the Central Section now numbers fifty, grouped as follows:

Honorary Members	2
Life Members	2
Active Members	41
Associate Members	5
	50

One new member joined the Association through the Central Section while two resigned from the Association. Two members requested affiliation with the Section, while two others, owing to removal, severed their affiliation with the Section.

Respectfully submitted,

J. ALDEN MASON,
Secretary

REPORT OF THE TREASURER

Balance, March 3, 1923.		\$ 32.89
	<i>Receipts</i>	
Gift of Dr. Otto L. Schmidt	\$ 50.00	
Dues received by secretary pro. tem.	87.00	
Dues received by secretary	116.00	
	\$253.00	253.00
		\$285.89

Disbursements

Payments to Am. Anth. Ass'n		
by treasurer pro. tem.	75.00	
by treasurer	85.00	
Expenses of treasurer pro. tem.	2.00	
Expenses of treasurer	5.05	
Printing	25.75	
	<hr/>	
	\$192.80	192.80

Balance, March 28, 1924

93.09

Respectfully submitted,

J. ALDEN MASON,
Treasurer

The following officers for 1924 were nominated and elected:

President: Berthold Laufer*Vice Presidents:* Charles E. Brown and Charles R. Keyes*Secretary-Treasurer:* George R. Fox*Executive Committee:* S. A. Barrett, George L. Collie, Ralph Linton, W. C. Mills, L. B. Wolfenson*Council:* Amos Butler, Milford G. Chandler, Fay-Cooper Cole, M. R. Gilmore, W. B. Hinsdale, A. E. Jenks, A. B. Lewis, C. L. Owen, E. K. Putnam, Alanson Skinner, Hutton Webster.

Mr. C. F. Newcombe was nominated and elected to honorary membership.

The following rules and resolutions were adopted:

(1.) The Constitution of the Central Section of the American Anthropological Association may be amended at any regular meeting by a three-quarters vote of members present.

(2.) The Constitution of the Central Section of the American Anthropological Association shall be amended to provide as follows:

Members of the Central Section of the American Anthropological Association who pay their dues to the Association through another affiliated organization, such as the American Ethnological Association, shall enjoy full active membership on payment of \$1.00 annual dues to the Central Section.

(3.) The Central Section of the American Anthropological Association expresses its sincere thanks to the University of Michigan and to Drs. W. B. Hinsdale and Alexander G. Ruthven for the kind hospitality afforded the Section during the meetings.

(4.) The Central Section of the American Anthropological Association expresses the sense of the Section that the next annual meeting be held in the vicinity of Chicago.

The Archeological Society of Ohio presented the Section with a gavel made from the wood of the Logan Elm.

The following scientific papers were presented:

Alexander G. Ruthven, Address of welcome.

Ralph Linton, The Origin of the Plains Earth-lodge.

J. Alden Mason, The Arhuaco and Goajiro Indians of Northern Colombia.

John Harvey Kellogg, A new Method of Studying Posture and Development. (Illustrated).

W. B. Hinsdale, A Piece of Float Copper from Houghton Co., Michigan.

H. C. Shetrone, The Hopewell Mound Group—Sources and Utilization of Material.

George R. Fox, Mounds and Collections in the South, with particular reference to Louisiana.

J. Alden Mason, Archeological Explorations in the Region of Santa Marta, Colombia.

T. C. Hodson, Language Problems in India.

At a joint meeting with the American Oriental Society:

A. T. Olmstead, The Early Religions of Canaan.

Ovid R. Sellers, Scales in Egyptian Music.

Campbell Bonner, A Problem in the History of a Legend.

Walter E. Clark, The Puranas.

At the meeting of the American Oriental Society the following papers were presented:

D. D. Luckenbill, The Egyptian Earth God in Cuneiform.

Caroline Ransom Williams, Women's Cylindrical Amulets.

Leroy Waterman, Abbreviated Ideograms in the Assyrian Letter Literature.

T. C. Hodson, The Belief in Reincarnation and its Relation to Social Structure and the Cycle of Life Customs.

Ira M. Price, Boats and Ships in Early Babylonia.

D. D. Luckenbill, The Pronunciation of the Name of the God of Israel.

Henry A. Sanders, The Text Character of the Berlin Genesis.

Theophile J. Meek, Some Notes on Canticles.

Kemper Fullerton, Isaiah 8:5-10.

Moses Bittenweiser, The Image of Nebuchadnezzar's Dream.

Martin Sprengling, The Origins of the Court Mosque.

_____, A Modern Druse Catechism.

Albert H. Lybyer, Current Political Changes in the Islamic World.

ANTHROPOLOGICAL NOTES

DR. EDWIN M. LOEB, formerly of the Anthropology department of the University of California, and Mrs. Loeb, have recently returned to Honolulu after pursuing anthropological researches in Niue, Polynesia. Special attention was paid to the subject of medicine-men, *taula-atuas*, to religion and mythology generally, and to the recording of genealogical tables, all information being secured in the vernacular. Material culture was not neglected; the collection made includes bows and arrows, bird nets, spears, house and canoe models, articles of adornment and specimens of modern weaving. Photographs were taken of cave burials, dances, etc. Dr. Loeb also obtained physical measurements and scalplocks. The investigators are preparing their notes for publication.

IN RESPONSE to the recommendation of the Section on Anthropology at the Australian meeting of the Pan-Pacific Congress, the Bishop Museum has begun ethnological investigations in Micronesia under the direction of Hans G. Hornbostel. During the present year provision has been made also for field work in Manua and Tutuila.

DR. MANUEL GAMIO, director of the Bureau of Anthropology of Mexico, recently visited the United States upon invitation of the Carnegie Institution of Washington and delivered two addresses in Washington on the anthropology and archeology of Mexico. These lectures were followed by conferences in which leading representatives of archeological studies in this country took part. The Carnegie Institution announces that as result of arrangements consummated during Dr. Gamio's visit, immediate steps will be taken to inaugurate its program for archeological investigations in Yucatan in accordance with agreement with the Mexican government on this subject which was reached prior to the outbreak of the Mexican revolution. The party which will take the field this spring for preliminary investigations and excavations at Chichen Itza will consist of S. G. Morley, associate in archeology; Earl H. Morris, archeologist in charge of excavations; Monroe Amsden and O. G. Ricketson, Jr., assistant archeologists.

DR. PAUL PELLLOT, Professor of the History, Literature and Art of Central Asia in the College de France, Paris, on March 15th

addressed the Oriental Club of Philadelphia on *The Problem of the Identity of the Hsiung-nu, the Huns and the Hûna*." His conclusion was that these names refer to the same tribal group which was of Mongolian affinity. Professor Pelliot remained in this country until May.

PROFESSOR FELIX VON LUSCHAN, who held the chair of anthropology and ethnology in the University of Berlin, has died, aged sixty-nine years.

INVESTIGATIONS made this spring by the Bureau of Educational Research of the University of Denver, under the direction of Dr. Thomas R. Garth, have included three expeditions to Indians. One was conducted by a graduate student at Chilocco, Oklahoma, another in Santa Fe and Albuquerque, and the third on the Ute and Navajo reservations in Colorado and New Mexico. Studies are being made in the fields of intelligence, achievement, musical talent, color preference and will-temperament.

AN IMPORTANT EVENT in New England Indian history took place in Providence on December 13, 1923, when representatives of the New England tribes convened at the call of Dr. Thomas W. Bicknell, the Rhode Island historian. The Penobscot, Passamaquoddy, Narragansett, Nehantic, Nipmuck, Mohegan, Pequot, Wampanoag, Abnaki and Massachusetts were represented. A New England Indian Council was organized and committees and officers elected to preside over various activities among which is the perpetuation of ethnological information still preserved among the descendants.

THE MUSEUM OF THE AMERICAN INDIAN, HEYE FOUNDATION

THE MUSEUM OF THE AMERICAN INDIAN, New York, through its director, Mr. Heye, announces the publication of a new series of occasional notes on the activities of the Museum. The notes appear in the same form and size as the monographs of the Museum. From the first number some notes are quoted.

Among the recent important collections acquired by the Museum is one comprising nearly 1100 specimens illustrating the ethnology of the Guano, Tumraha, and Chamacoco tribes of the Chaco district of Paraguay. Noteworthy among the objects are head-dresses, made of feathers of the rhea, the heron, and other birds, such as are worn by medicine-men, and girdles, arm-bands, and robes, ornamented with

feathers, used in various ceremonies. There are also bags made of karaguata fiber, worn as masks in dances. There are many wooden smoking-pipes, which vary in form from plain cylinders to figures of conventionalized human beings; also numerous wooden clubs, averaging four feet in length, the blades of which are ancient stone celts, while other bladed clubs are carved entirely of wood. The collection was gathered in Paraguay twenty-five years ago by Mr. A. V. Fric, of Prague, Bohemia, while engaged primarily in gathering medicinal plants.

The archeological objects recovered during the excavation of the Burton mound in Santa Barbara, California, by an expedition of the Museum made possible through the generosity of Mrs. Thea Heye, have thus far not all reached the Museum, but those received prove the site to be one of great importance, especially as this ancient Chumashan village was situated at the junction of the trail along the coast and that from the east. In the near future a statement will be issued by the Museum concerning the skeletal remains found beneath the so-called reef-rock layer, and the artifacts that accompanied them.

Professor Marshall H. Saville lectured before the New York Society of the Archaeological Institute of America, at Columbia University, on December 1st, and the Buffalo Society of Natural Sciences on January 4th, on Ancient Maya Cities of Yucatan.

Dr. Thomas Gann, who was engaged in archeological explorations in British Honduras during the years 1917 and 1918 for the Museum of the American Indian, Heye Foundation, New York, has become connected with the Carnegie Institution of Washington, and will take an active part in the proposed explorations at Chichen Itza, Yucatan.

Dr. S. K. Lothrop sailed for Salvador on January 5, where he will conduct an archeological reconnaissance and later settle at some typical site for extended excavation.

Exceeding all expectations at the time, the Museum in New York opened its doors to the public on November 15, 1922, the number of visitors during the first year reached 92,155.

Mr. Charles O. Turbyfill returned the first of the year from Crittenden county, Arkansas, where he spent two months in archeological exploration.

At the annual meeting of the Maya Society in New York in December, Professor M. H. Saville was elected vice-president and Mr. Hodge a councilor.

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THE SEQUENCE OF CULTURES IN MEXICO¹

By MANUEL GAMIO

THE CULTURES of pre-Hispanic America are probably branches of a primitive mother culture which became differentiated in various aspects and attained diverse grades in evolution according to special climatic and geographic environments in different parts of the continent.

Reliable modern investigators have arrived at an opinion with which I think this audience will agree—that American man did not originate in this continent, but that he began to emigrate to this continent during the early part of the Neolithic period and brought with him expressions of an elementary culture. I shall not discuss from the chronological standpoint the date of this important occurrence since that does not touch the heart of our problem.

Until now, archaeological research has been done in reverse order; that is, it has gone from the complex to the simple or elementary, since it seemed preferable first to investigate those phases in which derived civilizations flourished in all their differentiations; while study of the mother or primitive culture, as well as of the intensely interesting first steps toward differentiation, has been neglected. It is therefore necessary to begin a parallel investigation in reverse order, proceeding in an ascending line from the elementary to the complex or from the mother culture to its derivatives. This study can be made from five points of view.

¹ Address delivered at the Carnegie Institution of Washington, April 17, 1924.

First, we should locate the original home of Neolithic culture before its emigration to America, and determine its distinctive characteristics.

Second, we must ascertain in what parts of the United States and Canada vestiges of this culture still exist in the Neolithic state and in the most primitive stages of its development in America. This task naturally belongs to specialists in the United States and Canada. I am presuming that such vestiges can be found in those countries, since it is probable that during the longer or transient periods that Neolithic man was there, he could not have acquired any noticeable degree of culture on account of the rigorous climate, as in the case of the Eskimo. This view is supported by the fact that, with the exception of the "Pueblos," who really belong to the Mexican archaeological region, the pre-Hispanic cultures of the United States and Canada are primitive and inferior in degree of development to the cultures of Mexico.

The third aspect of the ascending investigation which we are discussing should be to determine the mother culture from which the other pre-Hispanic civilizations of Mexico are derived and whether this culture is the same, at a more advanced stage, as the Neolithic one presumably existing in the north.

We must discard from the outset old fantastic traditions told by ancient chroniclers about giants or "quinames" supposed to be the forefathers of American man. These suppositions were based upon the discovery of pieces of skeletons of enormous fossil animals. The pseudo-scientific discoveries of the Man of Peñon or the Man of Tequixquiac were equally erroneous. In fact, human bones and archaeological vestiges found thus far in Mexico provide only relative knowledge of the first groups inhabiting Mexican territory. The bones found and studied scientifically prove that there existed a modern type of man similar to the present Indian. From the point of view of archaeological arts and industries, we find that almost all the pre-Hispanic cultures produced simultaneously the chipped stone characteristics of the Palaeolithic industries, the polished stone of the Neolithic, and architecture, pictorial decorations and sculpture similar to those of the historic civilizations. This fact renders it impossible to make a chrono-

logical classification in accordance with the clearly defined and differentiated stages presented by the archaeological industries of Europe. On the other hand, migrations and cultural contacts were so numerous, as well as intensive and extensive, that it is difficult to find a place in which various cultures have not been established either simultaneously or in different periods; and, since these cultures have nearly always exercised a mutual influence, the problem of determining the antiquity of each becomes very complex.

In the future, the stratigraphic method will contribute toward determination of the oldest Mexican culture; but so far the determination has been impossible. Since we lack a chronological reference chart, we do not know how much time elapsed during the formation of the sediment deposited over cultural vestiges. The Department of Anthropology of Mexico has made two stratigraphic studies; though these unfortunately have only a limited value. The first is of Tenoxtitlan, the ancient capital, whose pavements and architectural ruins are found at an average depth of five meters below the present City of Mexico. In this case, it is evident that these five meters of sedimentary deposit correspond to four centuries. Nevertheless, this fact does not have definite scientific value because the deposit is the result not only of natural causes such as water and wind, but also of human activities which have played a large part in its formation, since much of it is made up of the ruins of destroyed temples and other extraneous material. The other study is that of the strata deposited during four hundred years in the Valley of Teotihuacan. In order to find their depth, excavations were made near the walls of some colonial churches to the depth of the basement foundations which had been buried since the sixteenth century. The different levels found in a small number of excavations forbade generalization regarding the whole valley because the hardened sub-soil upon which the deposit had been formed varied so much in direction, inclination, etc., that some deposits were very deep and others shallow although all had been formed during the same lapse of time.

A fortunate accident made it possible for the Department of Anthropology to determine that the culture in the valley of Mexico known as the Archaic is the oldest in the country and probably the mother culture of Mexico. For fifteen or twenty years statuettes and vessels of this Archaic type had been found in various parts of the country, especially in the valley of Mexico. In stratigraphic excavations in Atzacapotzalco from 1912 to 1915, made by the author under the auspices of the International School of American Archaeology and Ethnology, it was found on two occasions that the strata of Archaic culture were below those of Teotihuacan and Aztec cultures, from which fact the generalization was deduced that the Archaic was the oldest in the Valley of Mexico. On the other hand, in other excavations the Teotihuacan and Archaic appeared in the same strata, and sometimes the Aztec likewise. Later it was observed that in nearly all the quarries which furnish rock of volcanic origin for buildings in the Capital, human remains and potsherds were frequently found, and upon investigations these vestiges were discovered in greater abundance in the Copilco quarry of the Pedregal at San Angel; so various tunnels were made under the lava flow at a depth of seven meters. The results were intensely interesting since it was found that all of the statuettes and vessels were of Archaic type. Secondary tunnels were afterward dug in quarries at Coyoacan and Tlalpam and it was proven that in all the region covered by the lava flow a large human group with Archaic civilization existed prior to the volcanic eruption. Finally, in collaboration with the Department of Anthropology, Dr. Byron Cummings discovered a pyramid and many objects of Archaic type near Tlalpam. So, the fact that within a comparatively extensive area abundant cultural vestiges of Archaic type are found to the exclusion of other cultures, and the circumstance that the Archaic vestiges show no influence of other cultures, indicate conclusively that the Archaic culture was the first to appear in the valley of Mexico and is consequently the oldest one. If there had been others in the same place or even more remote regions, they would necessarily have mixed with the Archaic and influenced it, as happened many centuries after the volcanic eruption when the Aztec and

Teotihuacan cultures arrived in the Valley from the North and fused with the Archaic which had survived the eruption.

Now, then, is this Archaic culture the same which came into America during the early part of the Neolithic period? Undoubtedly, it is not, as I shall demonstrate. Archaic vestiges in the Pedregal discovered thus far consist of vessels, many of which are decorated in polychrome, and anthropomorphic statuettes, showing great variety in headdress as well as in collars, earrings, bracelets and, occasionally, skirts which seem to be made of feathers or leaves. The cheeks of some of the little heads are rouged. Two statuettes represent the gods of water and fire and are similar to those of the same gods of the Teotihuacan culture which succeeded the Archaic, as will be proven. In architecture, the Archaic groups were builders of great monuments which are archetypes of the pyramids of other cultures. Some maize-grinding stones or metates and manos are worthy of mention among their industrial objects, analogous as they are to those of other cultures; this, with the burnt ears of maize found, indicates an agricultural people who knew something of the cultivation of plants. Can a people of such cultural advancement belong to the early Neolithic period when the first emigration to America began? Undoubtedly, they do not; and many centuries must have passed from the time when Neolithic man found himself face to face for the first time with virgin America, to that era in which he had become transformed into planter, builder, and artist.

While the Archaic type is culturally inferior to other Mexican civilizations, it represents an evolutionary stratum superior to the cultures of the United States and Canada. We believe, therefore, that there is some ground for our supposition that the links connecting the Archaic or Sub-Pedregal man with Neolithic man as he immigrated into the Americas are to be found in these two countries; so it is logical that Mexican specialists should devote their activities to the study of archaeological material actually existing, and not to that of Neolithic vestiges whose existence is problematical.

The fourth step in the ascending investigation consists in determining the characteristics of the Archaic or mother culture,

especially determining its relation to its derived cultures and to those with which it came in contact. Before entering upon the material, I will state that very few of the concepts and conclusions which follow are the result of the reduced amount of archaeological literature of the past decade but rather are deductions based upon investigations made by the Mexican government in various parts of the country during that period of time. I say this in order to assume responsibility for all errors and I shall be grateful to have my attention called to such in order that they may be corrected.

ARCHAIC CULTURE

The relatively well defined area covered by this culture is large, comprising the Federal District and the states of Mexico, Morelos, Puebla, Hidalgo, Tlaxcala, Guerrero, Jalisco, Colima, and Tepic. In other places not yet explored, such as Guanajuato and Queretaro, are groups of Otomis who, according to all indications, are direct descendants of the Archaics, so it is more than likely that vestiges of the culture could be found in those states also.

The pictures herewith² show objects of Archaic type found under the lava bed of the Pedregal and already described. An examination of them confirms us in the opinion that this place is the oldest known seat of Archaic culture, since they are much more primitive and less developed artistically and industrially than are those, for instance, of Hidalgo, Puebla, Tlaxcala, Morelos and even other parts of the valley of Mexico; while those of Colima, Jalisco, and Michoacan have reached a still higher stage of evolution.

In view of this, I shall repeat a suggestion made some time ago; that it would be well to establish an artistic and industrial exhibit of objects found or hereafter discovered beneath the bed of the Pedregal. The cultural type of Archaic objects found in other regions could thus be classified more easily and their grade in the evolutionary scale determined by comparison with those

² Not reproduced here, but displayed at the Carnegie Institution of Washington.

of the Pedregal. This is especially necessary in reference to architecture, and, with the archaic pyramids of the Pedregal as a pattern, numerous monuments in Michoacan, Jalisco and other states known popularly as "yacatas", "momoxtles", "tlahteles", etc., can be classified according to their stage of culture. For the same reason it will be well to adopt the term "Sub-Pedregal Culture" for this type, since the word "Archaic" connotes antiquity but possesses no specific significance.

Archaic culture probably has many derivatives, but I shall cite the particular case of the Teotihuacan or "Toltec" phase because I have been able to verify certain things regarding that culture, as follows. The Archaic groups lived in the valley chosen by the pre-Teotihuacanos from the north as the site of their famous city, as is proven by the fact that Archaic objects and fragments, as well as complete figurines in clay and stone, are frequently found in the adobe with which they built; and objects of this type have been found in the most recent excavations in this region generally.

From the fusion of Archaic and Teotihuacan, resulted the Toltec or Teotihuacan culture, as is demonstrated by the large number of Teotihuacan statuettes that have their prototypes among those of Archaic affiliation. The most interesting example is that of the sculptural representation of the Teotihuacan gods of water and fire which clearly identify with corresponding prototypes among the Archaic statuettes.

I think that it is well to state that in the archaeological nomenclature recently adopted by the Department of Anthropology, we have discarded the term "Tarascan" which lacks specific significance and which has been employed to indicate pre-Hispanic vestiges existing in large quantities in Colima, Tepic, Jalisco, and Michoacan, for these vestiges belong fundamentally to the Archaic type but represent a much more advanced stage than that observed in the Valley of Mexico and probably were influenced by other cultures.

Thus far, I have set forth the archaeological point of view that the Archaic culture is the oldest in the Valley of Mexico and probably in the whole country. Now, the majority of colonial

and modern authors hold the opinion that the Otomi were the oldest inhabitants of the Valley, and base this theory upon historic traditions. I hold that the Archaics and Otomis were one and the same group. The fact that the present indigenes of Jalisco and Michoacan speak Tarascan, although living in regions that archaeologically are Archaic, does not nullify the argument; their speaking Tarascan may be due to contacts between the Archaics and emigrants whose language they adopted.

Although I am opposed to making hypothetical chronological estimates, I am obliged in this case to say two things regarding the antiquity which I attribute to the Archaic culture of the Pedregal. I wish to make it plain that what I say has nothing to do with extravagant conjectures written along this line, some of which go to the extreme of stating that the Archaic vestiges of Pedregal date as far back as twenty or thirty thousand years; these opinions being based upon fantastic archaeological considerations and vague geologic calculations regarding the antiquity of the volcanic eruption in the Pedregal. For my part, I believe that no culture in Mexico dates farther back than the early Neolithic period when man first emigrated to America. In the case of the Pedregal, permit me to suggest that the antiquity of cultural vestiges found there is not less than four thousand years, since the Archaic was the direct antecedent of the Teotihuacan culture, and to that, as we shall see later, I attribute an antiquity of more than three thousand years. As a matter of course, these statements are purely hypothetical and in no sense to be taken as scientific determinations.

Having finished this exposition of Archaic culture, I must explain that I gave it ample space in this lecture because it deserves such as the mother culture of Mexico, and because, the more thorough the knowledge of it, the more rapid will be the advance of investigation of the cultures which issued from it.

TEOTIHUACAN CULTURE

For a long time the manifestations of a certain cultural type which had not been clearly identified were vaguely called "Toltec", among other reasons, because the only available sources of

information being documentary the material vestiges of that civilization were unknown. As a result, the main and almost exclusive tendency was along the line of investigation of the intellectual expressions of Toltec culture, such as its religious ideas, ethics, aesthetics, while almost nothing was known about its architecture, ceramics, domestic and industrial implements.

Happily, the Department of Anthropology had the opportunity to explore and investigate for several years throughout an extensive region in which vestiges of the latter class exist, and as a result, one of the main deductions is that the archaeological city of Teotihuacan was the center in which remains of the so-called Toltec type were centered in the most harmonious and typical way. For this reason, it is fitting to indicate as "Teotihuacan type" the culture which until now has been known as Toltec.

The origin of this culture, as we said above, appears to have been the result of the fusion of Archaic culture with another brought from the North by the pre-Teotihuacans. Sculpture of Teotihuacan type, as well as pyramidal construction, has prototypes in Archaic culture. On the other hand, the use of buttresses, doors and stairs, of cement for walls and floors, etc., was probably imported from the North, probably from the Transition or Chalchihuites culture which in turn appropriated elements from that of the "Pueblos". Later, I shall take up the question of the evolution of Teotihuacan culture.

The exact antiquity of this culture is not known, but a relative date can be fixed. In general, I think, it antedates the Maya culture whose oldest vestiges are, according to reliable opinions, of the beginning of the Christian era. Now, the Teotihuacan culture shows no Maya influence, while the reverse is true, as can be seen in Chichen-Itza where the touch of Teotihuacan or Teotihuacan-Aztec culture is visible. Since it may be argued that Chichen-Itza belongs to the sixth century of the Christian era, I shall give more convincing reasons. Teotihuacan culture is a direct descendant of Archaic, while Maya is not. Therefore, if Archaic culture is the oldest in Mexico, clearly its most direct descendant is older than Maya culture. It is possible that in

future excavations in the Maya area, Archaic vestiges which are the prototypes of Maya culture may be found; but this does not seem likely to occur because Maya civilization represents a more advanced stage in cultural evolution than does Teotihuacan, so that it is more logical to infer that its prototypes will be found in the latter rather than directly in Archaic culture.

If it is admitted that Maya culture began to unfold during the early part of the Christian era and that this stage required a preparation of five hundred years, it would not be an exaggeration to estimate that Teotihuacan culture began, developed, and disintegrated during a still earlier period of a thousand years or more, which leads to the hypothesis that its antiquity dates back as far as three thousand five hundred to four thousand years.

Research of stratigraphic and architectural nature into the culture of the archaeological city of Teotihuacan, which, as I have said, is the most typical, has made it clear that there were two great flourishing periods followed by corresponding periods of decadence and dispersion. In the archaeological zone of Teotihuacan we deal with more than one city; there are vestiges of two, one built above the other and belonging to two different and clearly defined epochs, though of the same general cultural type, which was apparently in full flower in the first, but decadent in the second. I believe, for reasons which time will not permit stating here, that the city of Teotihuacan was the famous Tula of historic tradition.

According to data and observation we may attribute the same extension to Teotihuacan culture as to Archaic, with certain variations. For example the latter flourished in Guerrero, Jalisco, Michoacan, Tepic and Colima, while vestiges of the Teotihuacan culture in those places are scarce. But generally, the two are found in the same regions above mentioned.

Just as Archaic culture is the antecedent of the Teotihuacan, the latter is in its turn the antecedent of the Aztec, especially in matters relating to intellectual culture such as religious ideas, ethics, aesthetics, as well as social institutions. On the other hand, its influence is much less seen in material things; architecture, sculpture, decorative arts and even domestic and indus-

trial implements of Aztec type have their own well-defined characteristics. I make special note of this because the reverse is frequently true—that ideas are less easily influenced than are material expressions of culture. It is probable that the first Aztec migrations found the city of Teotihuacan practically in ruins while the surviving inhabitants clung to their ancient ideas.

It will give some notion of the persistence of Aztec art to cite the instance of the ceramic remains of this type found in stratigraphic excavations in Teotihuacan. These appear in very small quantity in the deepest strata side by side with large quantities of Teotihuacan ceramics; and the same Aztec decorative motifs appear in the ceramics of strata of a very much later period.

Since I am dealing in this lecture with concepts not very well known, I shall not refer to other aspects of Teotihuacan civilization which have been set forth in "*La Poblacion del Valle de Teotihuacan*", a work published two years ago by the *Direccion de Antropologia*.

AZTEC CULTURE

Aztec culture extended over a larger area than did the Archaic and Teotihuacan, but was less intensive than the Archaic in Tepic, Michoacan, Jalisco, and Colima. There are vestiges of it in Mitla and probably as far south as Central America. The Maya culture appears to have been greatly influenced by the Aztec and Aztec-Teotihuacan, as can be seen in Chichen-Itza and other places.

While the problem of its antiquity has not been solved, apparently, as I have said, the most important immigrations arrived in the valley as the Teotihuacan civilization disintegrated, although it is certain that a small number of individuals of Aztec culture came with the first Teotihuacan people to the valley of that name, as is proven by the stratigraphic excavations to which I have alluded.

Aztec culture has been studied extensively, especially in its intellectual phases as illustrated in codices and by ceramics. So I shall limit myself to making a few supplementary observations. According to the Album of the International School of

Archaeology and Ethnology and the Text to that volume, the oldest ceramic ware of Aztec type in the Valley of Mexico is found in Culhuacan.

It is well known that for fanatic reasons the Spanish conquerors followed the policy of destroying the temples and buildings of the Indians, as well as that the latter, in self-protection, covered their undestroyed pyramids with earth and other materials, so that virtually nothing was known of Aztec structures. Consequently, from an architectural viewpoint, the recent uncovering of pyramids of Aztec type, which are the first to be known, has made possible the communication of some interesting new features.

The Aztec and Teotihuacan pyramids differ in many respects. The first has two ascending stairways while the latter has only one. The corners of the Aztec pyramid are built of massive squared stones and the decoration of the mass of the pyramid is very simple, consisting of a mixture of lime-smoothed clay, while the Teotihuacan structures have high reliefs cut in stone, or done in fine stucco and colored red. All of these pyramids are built of several layers, which doubtless correspond to the successive groups which used them as temples. I shall not go into further detail for fear of making this lecture too long.

The pyramids mentioned are, first of all, the one dedicated to Huitzilopochtli and Tlaloc, gods of war and rain, the ruins of which were discovered in the heart of Mexico City. The Spanish conquerors destroyed the upper stories but the lower ones are still standing, as well as the staircases and inclined walls belonging to different epochs. The Cuernavaca pyramid is remarkable in that the walls of the temple are still standing on the top platform, although the roof has disappeared. The one in San Bartolo Naucalpam shows a colonial superstructure. Besides these there are those of Tenayuca and Mixcoac.

MAYA CULTURE

This civilization extends over a wide zone which includes the District of Quintana Roo and the States of Yucatan, Campeche, Tabasco, Chiapas and a part of Vera Cruz. The influence of this

civilization reaches probably as far as Tamaulipas to that tract of coast land which limits the eastern Sierra Madre. This influence is also clearly seen in Oaxaca, and even in Tehuacan of the state of Puebla, and in Xochicalco, Morelos. It is probable that both Archaic and Aztec cultures were influenced by the Maya in the land along the western coast.

There is very little to say about this civilization that is not already known, since many investigators, especially of the United States, have published extensive studies regarding it. It is to be hoped that the interesting investigations proposed by the Carnegie Institution will bring to light many obscure phases of this culture. I take the liberty of suggesting to students of the Maya problem, that they first inquire whether it is true, as I believe it is, that the prototypes of the Maya culture are Teotihuacan and Archaic. And what was the relation of the Archaic culture to Mayan? And, finally, it is of greatest importance to make a wide and careful stratigraphic investigation in those regions where the depth of the sediment deposit allows it, as it will not in the greater part of Yucatan.

MIXTEC-ZAPOTEC CULTURE

The Department of Anthropology has begun an integral investigation of the inhabitants of Oaxaca during three periods: pre-Hispanic, colonial and contemporary, but so far there are no data to give you.

The pre-Hispanic inter-cultural problem is the one which will absorb our primary attention. We think, *a priori*, that in the Mixtec-Zapotec culture appears a fusion of the Maya, the Aztec, and the Teotihuacan, and base our opinion upon the Maya influence noted in the architecture and ceramics of Monte Alban. In Mitla, not only the mural frescoes have an Aztec character, but Aztec influence is also seen in the decorations of the mural reliefs. And finally we have many times found Zapotec vases of Teotihuacan type.

HUAXTEC-TOTONAC CULTURE

The little that has been studied and published regarding this civilization has such small scientific value that it would be

useless to draw conclusions. Of this culture, which seems to have been influenced strongly by the Maya, all that we have in the way of archaeological material consists of the Tajin Pyramid, some stone "palmas" and "yokes", ceramics in Vera Cruz, vases and statuettes in Tamaulipas and a few mounds or "cues".

CHALCHIHUITES OR TRANSITION CULTURE

We designate this civilization "transition" because it represents a transition or intermediate epoch between the southern and the northern or "Pueblo" cultures. Its representative and most typical center is in Chalchihuites, Zacatecas. It probably extends throughout Durango, Zacatecas, Jalisco, Michoacan, and Aguas Calientes to the boundary of the western Sierra Madre. We have no data regarding its antiquity.

The architecture of the cultures already described presents the pyramidal structure and the use of the inclined plane for foundations and cornices, as its most striking characteristics. These are not found in the architecture of Chalchihuites, although it has in common with these southern cultures such things as stairways, columns, battlements, and other architectural features. The architecture of the "Pueblos" differs from the southern in using neither pyramidal construction nor inclined planes and from the Transition in having no stairs, columns, etc. The analogy between the architecture of the "Pueblos" and the Transition consists among other things in the use of flag-stones and large sun-dried bricks as building materials, as well as in the application of a coat of mud to the walls, followed by another thin coat of "white-wash" mixed with clay, which gave a more or less polished finish. A careful examination of the architecture of the Transition and Teotihuacan cultures reveals such a close analogy that one is led to ask whether the first is the archetype or the decadent derivation of the second, in spite of the fact that they differ in regard to pyramids and inclined planes.

Transition ceramic ware presents three typical groups: First, the polychrome of cloisonné technique in which the design was delicately traced on the vase and then filled with colored clay. This is surely a prototype of the famous Teotihuacan ceramic

or else a decadent phase of it. The second type is inlaid pottery, in which the design was drawn on the vessel before the clay was dry, and then filled in with colored clay. The ceramic ware of the third group is glazed and has painted decorations. In its decorative character, this ware seems to bear an analogy to the "Pueblo" art.

PUEBLO CULTURE

This culture extends throughout Chihuahua, Coahuila and perhaps Nuevo Leon. It would be vanity on my part to speak at length upon a culture which has received so much consideration at the hands of North American specialists. So I mention it only to say that its ceramics present an analogy in decoration to the Archaic, and I believe that its architecture and that of the Archaic of the Valley of Mexico are the original sources of all other archaeological architecture in Mexico.

RESEARCH WORK IN CENTRAL AND SOUTH AMERICA

The fifth step in the ascending investigation should consist in following the migration of North American civilization toward Central and South America and in finding what differentiation it experienced in coming in touch with new geographic, climatic, botanical and zoological conditions.

The study of the isthmian region, principally that of the Panama Republic, is of great value because in that small area there probably exist a great quantity and variety of traces of these successive emigrant cultures. A careful and extensive stratigraphic investigation of the whole region, making one or two hundred excavations, would do much toward the solution of this most important problem.

FUSION OF ASCENDING AND DESCENDING INVESTIGATIONS

As soon as the study of the mother culture of America and its derivatives has been made, it will be an easy matter to link the knowledge thus obtained with what we already possess and shall gain in the future regarding the higher cultures.

Then we shall really know the cultural attainments of the pre-Hispanic indigenous race; we shall be able to deduce the causes of passive degeneration during the colonial epoch and modern times, and apply an effective system of redemption in the Indian's behalf that shall lead to his participation in modern life.

Before closing this lecture, I would like to suggest as a possible solution of the five great archaeological problems just set forth, the uniting of the specialists of the continent in a well worked out plan which shall lead to harmonized, convergent, and positive results.

DIRECCION DE ANTROPOLOGIA,
MEXICO CITY.

THE SOCIAL ORGANIZATION OF THE TRIBES OF THE NORTH PACIFIC COAST

By FRANZ BOAS

THE VARIETY of forms of social organization found among the tribes of the coasts of Alaska and British Columbia has given rise to extended discussion which relates to fundamental questions regarding the theory of the growth of social institutions.¹ In the extreme north we find a purely matrilineal clan organization, while in the extreme south we find village communities with a loose family organization with bilateral descent in which, however, preference is given to paternal descent. In the central regions a mixed type is found in which descent in

¹ I mention here a few of the more important publications containing data and discussion:

Leonhard Adam: Stammesorganization und Häuptlingstum der Tlinkit Indianer, *Zeitschrift für vergleichende Rechtswissenschaft* 29:86 et seq., 1912.

——— Stammesorganisation und Häuptlingstum der Haida und Tsimshian, *ibid.*, 30:161-268, 1913.

——— Stammesorganisation und Häuptlingstum der Wakashstämme, *ibid.*, 35:105-430.

C. M. Barbeau: Growth and Federation in the Tsimshian Phratries. *Proceedings of the 19th International Congress of Americanists*, 402-408, Washington, 1917.

Franz Boas: The Social Organization and the Secret Societies of the Kwakiutl Indians, *Report of the U. S. Nat. Mus. for 1895*, pp. 311-737, 1897.

——— Der Einfluss der sozialen Gliederung der Kwakiutl auf deren Kultur, *Internationaler Amerikanisten-Kongress*, 14 Tagung, pp. 141-148, Stuttgart 1904.

——— Tsimshian Mythology, 31st Ann. Rep. B. A. E., 22-1037, 1916.

——— The Social Organization of the Kwakiutl, *Am. Anthr.*, n.s., xxii, 111-126, 1922.

——— Ethnology of the Kwakiutl, 35th Ann. Rep. B. A. E., 43-1481, 1921.

E. Sapir: The Social Organization of the West Coast Tribes, *Trans. Royal Soc. Canada*, ser. 3, ix, 355-374, 1915.

John R. Swanton (a): Social Conditions, Beliefs and Linguistic Relationship of the Tlingit Indians. 26th Ann. Rep. B. A. E., 391-485, 1908.

——— (b): Contributions to the Ethnology of the Haida, *Publ. Jesup North Pacific Expedition*, vol. v, Leyden and New York, 1905.

the female line is obtained by the transfer of privileges from a man to his son-in-law.

During the past winter I had an opportunity to study the little-known coast tribes of the central part of British Columbia. The conditions found among them throw additional light upon the probable historical development of the cultural life of this area.

The matrilineal organization of the northern tribes has been described by Swanton, Barbeau and myself. The Tlingit and Haida are divided into two exogamic groups each of which embraces a large number of localized sibs. It seems probable that the number of these exogamic groups was larger at an earlier time. Among the neighboring Athapascan tribes a three-group division has been recorded,² and among the Tlingit Swanton furnishes definite information of the existence of a small group which may intermarry with the two main divisions,³—in other words, of a group which forms a third unit. Swanton suspects the existence in past times of a similar group among the Haida.⁴ One of the chief differences in the Tsimshian organization, as compared to that of the Haida and Tlingit, is that we have here four exogamic groups instead of the apparent dual division among their northern and western neighbors. As among them, the exogamic division does not form a unit, but consists of a number of well localized sibs.

The fundamental idea of exogamy of the matrilineal divisions underlies the organization of all these tribes.

There are, however, evidences that the fundamental concept of sib relationship is not the same in all these groups. These differences are expressed in the systems of terms of relationship, in regard to which the Tsimshian differ very much from the Tlingit and Haida. The terminology of all three, however, has in common the trait that parallel cousins are considered as brothers and sisters, while cross-cousins belong to the group into which one may marry, and are designated by a separate term. In the paternal generation different terms are used for the individuals

² See discussion and literature in Franz Boas, *Tsimshian Mythology*, pp. 478-480.

³ See Swanton (*a*), 398, 409.

⁴ Swanton (*b*), 90.

on the father's side as against individuals on the mother's side. In the generation of grandparents, and that of grandchildren, no distinction is made according to the divisional affiliations of individuals. The Tsimshian system is characterized by a prevalence of reciprocal terms in one's own generation.

South of the Tsimshian live the tribes of Gardiner Inlet and Douglas Channel, which speak a Kwakiutl dialect closely akin to the Bella Bella. My information in regard to these tribes is very fragmentary. It is based on information obtained from two individuals whom I happened to meet at Bella Bella. They have five divisions, four of which correspond to the Tsimshian divisions, namely, Eagle, Raven, Wolf and Killer Whale. The last of these corresponds to the Gispawaduweda of the Tsimshian. Besides these they have the Beaver, which among the Tsimshian and Haida is an important crest in the Eagle group. The existence and the number of these five divisions were corroborated by Bella Bella informants. I was told that the five divisions are exogamic and that the child belongs to the mother's side. One of my informants, however, told me that her own children, as they were growing up, had been placed in different divisions by being given names belonging to the sides of one or the other of the four grandparents. Nevertheless she claimed that even after changing the position of the child the laws of exogamy continued, and that the children counted as members of the division in which they had been placed. I cannot give a definite statement in regard to this point.

The conditions among the Bella Bella have been described by Farrand and myself. In a previous statement I said that the Bella Bella have three divisions, Eagle, Raven, and Killer Whale. Farrand adds to these the Wolf. My inquiries during the past winter brought out the fact that, of old, the northern Bella Bella had actually only three divisions and that the southern Bella Bella represent the Wolf group. The idea that these four sides as such are localized appears here very much more clearly than among the three northern tribes. According to the concept of the Bella Bella, the ancestor of any local unit descended from the sky or sprang up from the ground, and the ancestral tradition shows to

which one of the divisions he belonged. If he came down in the form of an eagle, or had some other association with an eagle, he would belong to the Eagle clan, and so on. The Wolf clan is definitely associated with the village Hauyad. A woman who plays a most important part in Bella Bella mythology married a wolf and her descendants form the Wolf clan. The eldest of her children assumed the rôle of transformer and culture hero. The tradition is important for all the divisions of the Bella Bella. The song of the wolf children is the marriage song, and the mourning song of the mother is the funeral song in the ceremonies of all the divisions of the Bella Bella tribe.

There is no rule of exogamy connected with the fourfold division of the tribe. We find intermarriages between individuals of the same divisions not only at the present time, but also in descriptions of occurrences of an earlier period. Some elderly Bella Bella expressed themselves very clearly in regard to their concept. They said: "The northern tribes make a great mistake. Who has ever seen a wolf mating with an eagle? It is right that an eagle should mate with an eagle." Although they are perfectly familiar with the customs of the northern tribes, the idea of exogamy is entirely foreign to them. They favor local endogamy among the nobility in about the same way as is done by the Bella Coola, and as is also found exceptionally among the Kwakiutl. In speaking about the relations of these divisions they merely say that all members of one particular division visiting a distant village will be welcomed by their "friends," that is to say, by members of the division that bears the same name, no matter whether these are Bella Bella or Tsimshian or other northern tribes. I did not hear that they were aware of the absence of the fourfold division among the northern tribes.

Since these divisions do not form exogamic units, and since, furthermore, endogamy is only favored, not by any means enforced, the divisions are fairly evenly distributed over the whole territory. Nevertheless, the opinion is general that the Wolves belong to the southern Bella Bella tribe.

The primary position of an individual is definitely with his mother's division. However, position is not by any means perma-

ment, but in the same way as among the Kwakiutl a person may take his father's or his grandfather's position. For this reason the affiliations of an individual may change as he rises in rank.

It is interesting to note that the terminology of relationship which underlies the social system of the Bella Bella and of the more northern Kwakiutl tribes is the same as that of the Kwakiutl proper. In this system no distinction is made between collateral relatives in maternal and paternal lines. Father's and mother's brothers and father's and mother's sisters are designated by the same terms, and the same is true in regard to brother's and sister's children. While in general the terms of relationship are the same among all the tribes of Kwakiutl lineage, two terms show considerable variation according to dialect. These are the terms for uncle, (both maternal and paternal,) and for brother-in-law, (both wife's brother and sister's husband.)

It seems that farther to the south the system of matrilineal descent with a small number of divisions never exceeding five, disappears completely. The tribe of Rivers Inlet speaks the Bella Bella dialect, but so far as I have been able to discover from indirect reports, there is no trace of matrilineal clan organization found among them. From Rivers Inlet southward we find throughout tribes composed of small units, and derived through descent from a single ancestor and from other individuals who at an early period associated themselves with him. The number of these units in each tribe is quite large. Preference is given to paternal descent.

The general condition on the North Pacific Coast may be described as follows: In the north we have a group of tribes in which maternal and paternal lines are clearly distinguished and where we find a small number of divisions, from two to five, with definite functions regulating marriage, the matrilineal clans being exogamic. The most southern group of these tribes, the Tsimshian, have four clans, the Eagle, Raven, Wolf, and Bear (Killer Whale). Further to the south, the Bella Bella have the same clans that are found among the Tsimshian, but they lack entirely the function of regulating marriage, and the idea that intermarriage between two members of the same clan is incestuous is entirely foreign

to the thoughts of the people. The clans have a political function determining friendship or enmity between groups. We find also that maternal descent prevails, although it is not rigidly adhered to in so far as there is great freedom in assigning to an individual in later life a position in any one of the clans to which his ancestors belonged. The contrast between the terminology of the systems of relationship and the clan organization with preference of the maternal line is quite striking.

When we direct our attention primarily to the village communities of the Bella Bella, the organization is decidedly similar to that of the Kwakiutl. The whole tribe is found to consist of a great many local units, each of which claims certain privileges on account of its descent from an ancestor who came down from the sky or appeared in some other supernatural way. The same is true of the northern matrilineal tribes, except that the character of the traditions of the local units stresses the encounter of the ancestor with a supernatural being.

I have pointed out that the organization of the Kwakiutl is identical with that of the northern coast Salish tribes. However, the idea that local units have certain privileges, is much less developed among the coast Salish tribes.

We might, therefore, describe the whole situation in the following way: As we go northward from the State of Washington, the idea of the unity of the village community becomes more and more intimately associated with certain privileges which may be described as crests. When we reach Bella Bella we find overlying this system a system of a small number of clans which are identical in name with the clans of the northern matrilineal tribes. The sameness of the clan names can be due only to historical connection. The four clans are almost functionless as compared to the village communities with their functions. Connected with the occurrence of the clans, the idea of maternal descent prevails. The emphasis on matrilineal descent is quite contrary to the linguistic forms used among these tribes. Still farther to the north the emphasis laid upon local units or village communities persists, but the communities are strictly subordinated to the exogamic clan and the position of the individual is absolutely

fixed, both in regard to the local unit and to the clan to which he belongs. Changes occur rarely, and then only by formal adoption.

We might consider in the same way the clan system of the north, and follow its characteristics southward. The characteristic exogamy of the large tribal divisions dwindles down and disappears as we reach the most southern tribes. In some regions it gives way to a marked tendency to endogamy. In the north the local units are definitely assigned to one or the other of the larger divisions; in the south they form units that are the more independent the farther south we go.

The general conditions among the Bella Coola fit in well with the distribution just described. They represent an isolated branch of the Coast Salish tribes, which are organized in village communities. Among the Bella Coola we have village communities with privileges quite analogous to those of the Bella Bella, and with a prevalence of paternal descent. There is no grouping of these units in larger divisions and, as among the Bella Bella, a tendency to endogamy among the nobility occurs.

From my earlier studies of the distribution of types of social organization, on the North Pacific Coast, I have concluded that the transmission of social position to the daughter's son which is found among the Kwakiutl has developed through the influence of the northern tribes, from whom the Kwakiutl obtained the concept of crest privileges, and that the stimulus to this development lay in marriages between the men of the southern tribes and women of the northern tribes. This conclusion is strongly corroborated by the conditions found among the Bella Bella, who show a type intermediate between that of the Vancouver Island Kwakiutl and the Tsimshian.

The matrilineal clan is fully developed among the tribes of northern British Columbia and of the coast of Alaska. As we go southward it loses more and more in significance until it finally disappears entirely. On the other hand the village community with bilateral descent but with an inclination to favor the paternal line is most fully developed in the southern part of the North Pacific Coast. Although it continues to be an important element

in the north, but with matrilineal descent, it is subordinated to the matrilineal clan organization.

The following table shows these conditions at a glance.

	<i>Coast Salish</i>	<i>Kwakiutl</i>	<i>Bella Bella</i>	<i>Northern Tribes</i>
Kinship terms	Bilateral			Unilateral
Descent	Patrilineal	Patrilineal with transfer of privileges to daughter's son. Privilege of change to other ancestral lines.	Matrilineal with privilege of change to other ancestral lines	Matrilineal
Marriage	Preference to village exogamy among nobility	Exogamy for obtaining new privileges. Endogamy for retaining highly valued privileges in family		Exogamy
Privileges of local units	Family tradition of chief's family. In the north sporadically weak crests	Crests and traditions		
Matrilineal clans	Absent	Absent	Present, from two to five	

I may add here notes on some of the characteristic traits of the political and religious organization of the Bella Bella. The tribe is divided according to rank into a number of classes. At the head of the local community are two head-chiefs of equal rank who are considered the descendants of the mythical ancestor of the local unit. They are called *G'd'laxa*, which may be translated as "the first down." According to the explanation given to me by several Bella Bella, this is not now interpreted as the first ancestor to come down from the sky, but as "the first to receive presents in a potlatch." The existence of two head chiefs explains a peculiar institution among the Kwakiutl for which I have never before been able to obtain an adequate explanation. There are in each tribe a small number of individuals who are the first to

receive in a potlatch. They are called *k̄wēk̄*, that is, eagle, or *ḡā'laxa*, first to receive. They are not considered chiefs, and the Kwakiutl are unable to explain the origin of their privilege except by the reference to a myth in which it is told that the ancestors of certain units received their gifts in order. These positions may be survivals of an older head chieftancy which has been superseded by a class of *nouveau riche*, who now form the aristocracy of the tribes and claim the highest rank and heavenly descent.

The second class among the Bella Bella are the chiefs (*hē'mas*). Next to these are the nobility (*ō'ma*). The common term for chief which is used by the Kwakiutl (*ḡi'gāmē*, stem *ḡig-*) is not known to the Bella Bella. (Another word *ḡigāmē* occurs in Bella Bella and in Kwakiutl, but is derived from the stem *ḡi-* to be in a certain position; *ḡi'gāmē*, standing in front.) The term *ō'ma* is used by the Kwakiutl for a chief's wife, who is designated by the Bella Bella as *k̄a'nīl*. The Kwakiutl, however, use the term *ō'mayu* to indicate high social position, greatness in a social sense, so that it would seem that this term also had in former times a more general meaning among the southern Kwakiutl tribes. The fourth class among the Bella Bella are the *ḡa'lgēm*, and the lowest group are the *xā'mala*. In Kwakiutl this word means orphan, and is used as an opprobrium, for orphans are of low rank because they are not helped by their parents to rise according to the regular scale of advancement.

This organization is, to a certain extent, connected with the organization of the tribe during the winter ceremonial. Only the two head chiefs can become cannibal dancers. A number of the more important dances of the winter ceremonial belong to the chiefs and to the nobility. In the winter ceremonial the seats of the two head chiefs are in the middle of each side of the house. The management of the winter ceremonial is not in the hands of the head chiefs, but is controlled by eight members of the nobility who form a council, and who arrange the winter ceremonial for each year.

The enormous complexity and confusion in the arrangement of the winter ceremonial at Fort Rupert seems to have arisen through a confusion between the family ceremonials of the Bella

Bella and the winter ceremonial. Although we do find among the Kwakiutl a distinction between the family ceremonial and the winter ceremonial, many traits of the former have been transferred to the winter ceremonial. The number of ceremonies (or dances) among the Bella Bella is limited. There are essentially only four groups of the winter ceremonial. These are from the lowest to the highest: the *ō'lala*, the *q!ō'minoqs*, the *tā'nīs*, and finally the *nō'nīsista*. These are mutually exclusive, and the dance house used by one group is taboo for members of the lower groups. Besides this, all the families have their family ceremonials, the *ḷaō'laxa*. Initiation into one of these is entirely distinct from initiation into the winter ceremonial.

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TEWA KIN, CLAN, AND MOIETY

By ELSIE CLEWS PARSONS

KIN

THE KINSHIP terms of the northern Tewa have been studied carefully by J. P. Harrington.¹ Only in connection with clan and moiety and from a comparative point of view do they call for revision. From a comparative point of view I have found certain interesting differentiations from town to town, illustrating what we have learned in connection with other pueblos and other Pueblo languages, namely that variation occurs from town to town speaking the same language, and that terms are borrowed irrespective of language. For example, the San Juan term for mother's older sister, *kaiye*, appears at Taos as a term for mother's sister also, whereas at San Ildefonso the term is probably little used. It is not recorded by Harrington. *Mimi* or *meme*, uncle (more particularly mother's brother), is another term that has crossed from language to language.

As to Tewa principles of classification, there is but little merging of direct and collateral kin. There is no merging in the grandparent or in the parent generation; in the speaker's generation parallel cousins may be addressed by the brother-sister terms. Cross cousins use the uncle-aunt terms. Maternal and paternal kin are not differentiated in the grandparent generation; they are differentiated in the parent generation, but the terms for father's brother and mother's brother are used loosely, and often indiscriminately. In all of these particulars the Tewa system is more like the Taos system than any other. Again the Tewa system is Tanoan in emphasis upon the principle of seniority. In stressing this principle to the exclusion of the principle of sex in the brother-sister terms, it is unique among Pueblo nomenclatural systems. It is also unique in its use of the diminutive reciprocal.

Whether or not these nomenclatural principles have pre-empted or have cut into the places where clanship might have

¹ Am. Anthr., n.s., XIV, 472-498, 1912.

found expression, Tewa kinship terminology is less expressive of clanship than other Pueblo kinship terminologies, excepting that of Taos—not that this relationship between kinship terms and clanship is sharply defined in any Pueblo system, thanks in part, at least, to the kind of linguistic borrowing we have already mentioned.

CLAN

Elsewhere, except at Taos, where there are no clans, kinship terms are used as clan terms. Of this usage I could record not a single case among my Tewa informants for the reason that they do not think of persons bearing the same clan name as thereby related. "You get that Tewa name from your mother, just as you get your Mexican name from your father," they would say, and that is all that clanship means to the middle-aged or elderly Tewa. Young people will tell you that there are no clans. Even one middle-aged woman of San Juan did not know the name of the clan she belonged to, and she was under the impression that at marriage a woman joined her husband's clan. Clans, three, or four (see table 1), perhaps more, there are in each town, but they are mere names, without function, not even regulating marriage. Unfortunately concrete data of marriages according to clan affiliations are slight; informants are for the most part ignorant of the clan of persons marrying into their family, let alone of the clanship of neighbors. The very suggestion that marriage choices might be restricted by clan affiliation was surprising to all my informants, excepting to one San Ildefonso woman who said that she would not like her daughter to marry within her clan.

Considerable kinship restriction on marriage choice there is, we should note, but on both sides, maternal and paternal. The descendants of the same great grandparents may not marry. Although this marriage rule may be of Catholic provenience, it has at present entirely native character. "Even if the priest said you could marry, your father would not let you," was said of cousin marriage.

TABLE 1. TEWA CLANS

San Juan

Specifically ² represented, 1923	Not specifically represented, 1923	Recorded in 1895 ³
<i>g'uɬpi</i> (an unidentified pink stone, pink quartz rather than "coral")	Earth Sun (<i>t'an</i>) Turquoise	Coral Earth Sun Gopher Turquoise Grass
Badger	Stick(<i>pe</i>) (?prayer-stick) Lizard (<i>k'eya</i>)	Bear Lizard Badger Calabash Mountain Lion
Corn	Cattail rush (<i>ye</i>)	Corn Cottonwood
<i>tsepɪŋ</i> (eagle, mountain)	Clouds stone(<i>k'u</i>)	Cloud Firewood Eagle (painted) Stone Water

Santa Clara

Specifically represented, 1923	Not specifically represented, 1923	Recorded in 1895
<i>g'uɬpi</i> Badger	Turquoise	Coral Badger
Corn		Corn
Earth		Earth Calabash Cloud Cottonwood Deer Eagle Firewood Gopher Oak Sun Willow

² That is in genealogical tables or through citation otherwise of a specified person. Without such particularization, informants in any town, especially in towns where clanship is feeble, are prone to supply fantastic lists of clans.

³ Am. Anthr., ix, pl 7, 1896.

<i>San Ildefonso</i>		
Specifically represented, 1923	Not specifically represented, 1923	Recorded in 1895
<i>g'uhpi</i>	Turquoise	Coral
		Turquoise
Sun	Water	Sun
		Antelope
	Earth	Badger
Grass ⁴	Deer	Bluebird
		Deer
		Buffalo
		Calabash
		Cloud
		Corn
		Cottonwood
		Coyote
		Eagle
		Fire
		Firewood
		Gopher
		Hawk
		Lizard
		Mountain Lion
		Shell bead
		Stone
		Tree (? Spruce)
		Water

MOIETY

Once in Jemez, in a group consisting of a Jemez townsman, some Keresan visitors and a man from San Juan, we discussed clanship in the various towns. The San Juan man, a younger man, insisted that in San Juan there were no clans, "but we have Summer People and Winter People," he said. This moiety system is indeed a substitute for clans in the social consciousness, where it holds the outstanding position clanship holds, let us say, among the Hopi. Among the Hopi and at Zuñi a moiety classification exists to a slight extent for ceremonial purposes; but it is quite dissociated from descent. At Jemez and among the Keres, where

⁴ *Ta*, a generic term for grasses. Robbins, Harrington, Freire-Marreco: Ethnobotany of the Tewa Indians, Bull 55, B. A. E., 1916, 63.

the two kiva system prevails, the ceremonial moiety becomes more prominent and the idea of descent is introduced. One belongs to the kiva or ceremonial moiety of his father, or parents, since the woman joins the kiva of her husband. The kivas are popularly referred to as Turquoise and Squash and are associated with ideas of summer and winter, more particularly at Jemez. But only among the Tewa and at Taos is there a double cacique-ship or town chieftaincy with a divided charge of the people according to season, and only among the Tewa is the alignment into Summer People and Winter People the outstanding principle of social classification, resorted to whenever classification is felt to be necessary.

There is a tendency for the moieties to be endogamous, less marked at San Juan, well marked at Santa Clara, and still more marked at San Ildefonso. In this connection it should be noted that between moieties and clans, as far as the slender evidence goes, there is between San Juan and Santa Clara a degree of relationship; within the respective towns the relation is confused (see table 2). When we recall that the moieties are patrilineal and that clanship is reckoned on the whole matrilineally, it is plain that the statement that "a clan, wherever it occurs always belongs to the same phratry"⁵ (moiety) must be open to question. Failure in the practice of moiety endogamy would imply encroachment upon alignment between moiety and clan. And there are other factors contributing also to variable grouping. Children whose paternity is unacknowledged, and of these there are many, are assigned to the moiety as well as clan of their mother, which arrangement unless the moiety were consistently endogamous would upset schematism. Again one may deliberately change one's moiety (but not one's clan) because of sickness, a direct contravention of any moiety-clan schematism.

At San Ildefonso there is a tendency to the distribution of houses according to moiety. There is one block of houses owned by Summer People and one block owned by Winter People. At Santa Clara and at San Juan my maps show that house pro-

⁵ Am. Anthr., n. s., xiv, 475; J. P. Harrington: The Ethnogeography of the Tewa Indians, 29th Ann. Rep. Bur. Am. Ethn., 61. 1907-1908.

prietors from the point of view of moiety affiliations are scattering. Given the fact that houses may be owned by women and men alike and that the moieties are not consistently endogamous, house grouping by moiety is obviously out of the question.

House owning by men and women alike is characteristic not only of the Tewa but of the rest of the middle Pueblo area, of the Keres and of Jemez. In the West (Hopi, Zuñi) the women own the houses, in the Northeast (Taos) the men own them, at least predominantly. Between house owning according to sex, matrilineal clanship, and patrilineal moiety (see table 3) there appears to be among the Pueblo tribes a definite correlation.

TABLE 2. TEWA MOIETY AND CLAN AFFILIATIONS⁶

	<i>g'uhpi</i>			Mountain Eagle			Badger			Corn			Sand			Grass			Sun		
	S	W	S-W	S	W	S-W	S	W	S-W	S	W	S-W	S	W	S-W	S	W	S-W	S	W	S-W
San Juan	3	10	1	5	2		2	3	1	1											
Santa Clara	1	34					28			6			1	6							
San Ildefonso	17	6														15	3		40	1	

⁶ Data based on information given in genealogical tables and house lists. Data are too scant and influenced too much by the moiety and clan affiliations of informants to indicate more than that certain affiliations or associations are possible. S=Summer, W=Winter, S-W=Change of moiety.

TABLE 3. DISTRIBUTION IN PUEBLO INDIAN CULTURE OF CLAN, HOUSE OWNERSHIP, AND MOIETY

Hopi Zuñi	Keres Acoma	Laguna	Keres (Eastern)	Jemez	Tewa	Taos
Strong clans→		Clans	Feeble clans		Very feeble clans	No clans
Houses owned→ by women		Houses owned by men and by women				←Houses owned by men
Moieties, cere- monial traces ⁷		Ceremonial moiety (kiva)			←Strong moiety→	Ceremonial moiety

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⁷ E. C. Parsons: Laguna Genealogies, Anthr. Papers Am. Mus. Nat. Hist. xix, 228-231, 1923.

EVOLUTION OR DIFFUSION?

By FRANZ EOAZ

IN THE TWO preceding papers the distribution of clans and related social phenomena in two regions has been discussed. The inference must be drawn that in geographically extreme areas in these districts distinctive types of social organization occur, the intermediate regions showing transitional types.

This phenomenon is by no means confined to these regions or to social organization, but may be observed to a greater or less extent in all other cultural phenomena and in other parts of the world. The component elements of folktales common to two areas decrease in number the greater the distance, and while in intermediate regions we may find much that reminds us of the extreme types, that are being compared, the extremes themselves may be fundamentally distinct. This condition may be observed in the folklore of the North Pacific Coast when comparing Alaskan tribes with those of Oregon, or the Coast tribes with those of the interior, or when comparing the folklore of the Plateau tribes with that of the Pueblos. The same condition may be observed also in material culture and is found when we compare the tribes of the Plateaus with those of the Plains, or the Eskimo and the Northwest Coast tribes. It may be seen in the distribution of art styles. All this does not preclude the possibility of a unified stylistic pattern originating in the intermediate areas, and it does not imply necessarily a greater purity of the extreme, and a more mixed character of the intermediate forms.

It does, however, prove, in our opinion, that all special cultural forms are the products of historical growth, and that unless considerations entirely foreign to the observed distribution are introduced, no proof can be given that one of the extreme forms is more ancient than the other.

If we adopt the theory that matrilineal clans must be older than patrilineal or bilateral organization, we might be tempted to say that in the southern part of British Columbia and the eastern

Pueblo district the clan organization has broken down, the more so the farther we move away from the centers in which this type of organization is still flourishing. The distribution itself does not lead to such an assumption. On the contrary, we see merely the intermingling of two distinctive types, the combination of which leads to new forms and new ideas.

The importance of diffusion has been so firmly established by the investigation of American material culture, ceremonies, art and mythology, as well as by the study of African cultural forms and by that of the prehistory of Europe, that we cannot deny its existence in the development of any local cultural type. It has not only been proved objectively by comparative studies, but the field student has also ample evidence showing the ways in which diffusion works. We know of cases in which a single individual has introduced a whole set of important myths. As an instance we might mention the tale of the origin of the Raven which is found in one single tribe on the northern part of Vancouver Island. It is still known to a few individuals that this tale was introduced by a man who had for many years been a slave in Alaska, and who was ultimately ransomed by his friends. Nevertheless, the myth is regularly told as part of the Raven cycle, although it is repudiated by all the neighboring tribes. Another example is the introduction of the Badger clan in Laguna by a Zuñi woman. Her husband, also from Zuñi, introduced to Laguna Zuñi Kachina rituals and Zuñi stories which are now flourishing in their new environment. In earlier times the carrying away of women after raids, adoptions of foreigners, and other similar phenomena must have been a fruitful source of introduction of foreign ideas, the more so the smaller in numbers the tribe, and the more efficacious the influence of a single person. The introduction of new ideas must by no means be considered as resulting purely mechanically in additions to the cultural pattern, but also as an important stimulus to new inner developments.

A purely inductive study of ethnic phenomena leads to the conclusion that mixed cultural types that are geographically or historically intermediate between two extremes, give evidence of diffusion.

The question then arises as to how the extreme and most divergent forms must be considered. In our particular examples, the North Pacific clan organization with a small number of clans and many local groups possessing definite privileges must be compared with the bilateral organization of the south with numerous independent local units practically without privileges. In the Southwest, the matrilineal clan organization of the western Pueblos, almost entirely devoid of moieties, must be compared with the paternal moieties of the east without clans.

If it can be shown inductively that one of these types is the older one and that there are inherent dynamic conditions that tend to bring about transition from the older condition to the newer one, and that these conditions work in such a way that their potency decreases from the center to the periphery, the theory of a uniform development might be maintained. We require, therefore, in this case proof of three historical conditions: First, proof that one type is older than the other; second, that the younger type develops necessarily from the older one—in other words, that the dynamic conditions for a change in this direction are ever present; and thirdly that these conditions act with increasing intensity from the periphery towards the center.

As against these hypotheses the theory of diffusion takes the two distinctive types as given, and accepts as proven the presence of diffusion.

It should be borne in mind that the assumption of the antiquity of one particular type is essentially due to a classification in which the form that appears as the simplest from any one point of view is considered at the same time as historically the oldest. Nobody has felt the weakness of this assumption more clearly than Tylor who tried to support the general thesis by the study of survivals which indicate the character of earlier developmental stages. It cannot be claimed that a systematic attempt has ever been made to substantiate the theory of a definite evolutionary sequence on the basis of the study of survivals. All that can be said is that fragments of earlier historical stages are bound to exist and are found. We can, perhaps, best illustrate this by the example of matrilineal institutions. Whenever these are connected

with the holding of social prerogatives in the hands of men, and where, nevertheless, the family in our sense is an important social feature, there is a constant cause of conflict because the matrilineal descent requires that property or position must pass out of the family into another family group. This entails an element of weakness, because the allegiance of the individual is divided between two conflicting groups. It is, therefore, plausible, that, in this case, matrilineal society contains elements of instability, and may, owing to inner dynamic conditions, develop into a patrilineal or bilateral system. Then we may find examples of the survival of matrilineal forms in patrilineal society. This, however, does not by any means prove that everywhere matrilineal society must have been the earlier form. It merely proves the instability of matrilineal society of a certain type.

To us the assumption of a unique form of cultural beginnings does not seem plausible. Setting aside the question of what form of social life may have existed at the time when our ancestors first developed speech and the use of tools, we find everywhere phenomena that point to very early differentiations from which even the simplest cultural forms developed. Language and art are perhaps the best proof of this contention. Even if we should accept with Trombetti the unity of the origin of human speech, or with Marty, the conscious invention of language for the purpose of communication, we must concede that in the early development of language fundamental categories of grammar and lexicography have arisen that cannot be reduced to common principles, excepting those general forms that are determined logically or by the fact that language is a means of communication. The same is true in regard to stylistic forms of art which cannot be reduced to a single source. What is true of language and art, which do not become a subject of retrospective reasoning, seems to us no less true of those aspects of life which are subject to remodelling by rationalizing processes. To this class belong the forms of social organization. The theory of the priority of maternal organization implies necessarily that the original economic and social unit consisted of a first generation of mothers and their brothers and of a second generation of children, and that the

fathers of the children and the grandchildren were only temporary visitors to the family unit. It implies, therefore, a cohesion of this group long after the children had become independent adults, and a group consciousness in which no relations between father and children existed. The continued cohesion between mother and adult children is, to say the least, doubtful. According to the usual division of labor, such an organization rigidly carried through in a sparsely occupied territory and among a tribe dependent on hunting, would have doomed to extinction all groups without brothers and adult sons. While groups of this type may result from nonmarital sexual relations, we do not know of any cases where relations between men and women remain temporary throughout life, but marital relations continuing over a more or less extended period are the norm, and the social group includes the father.¹ It is, therefore, to us equally likely that primary units existed which consisted of families in our sense, and that adult children separated from the original groups and formed new family groups. Unless it can be proved that in an overwhelming number of cases the bilateral family retains evidences of a prior maternal stage, we have no right to assume that all the ancient types of groups of kin would conform to the same pattern, without any regard to the economic and other conditions that determine the size and character of the social unit.

It seems to us that the uniformity of early patterns cannot be proved. On the contrary, by analogy to the phenomena recently mentioned, we may infer diversity of early patterns.

We believe, therefore, that the great mass of observed facts bear out the theory that in the regions under consideration two fundamentally distinct forms came into contact, that the one is not derived from the other, but that through the mingling of the two forms new types arose in the intermediate districts.

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¹ For a full discussion of this matter see R. H. Lowie, *Primitive Society*, pp. 63 et seq. Boni and Liveright, New York, 1920.

THE SIGNIFICANCE OF CERTAIN TRAITS IN NORTH AMERICAN MAIZE CULTURE

By RALPH L'NTON

THERE can be little doubt that maize was first domesticated in Mexico or Central America and reached the United States as a cultivated plant. The route or routes by which it traveled northward can not, as yet, be established, but in view of its relative unimportance in the Antilles and its practical absence among the historic tribes of the Texas coast, it seems probable that the main line of diffusion was from Mexico to the Southwest and from there eastward to the Mississippi valley and northward over the Eastern Woodlands. In any case the eastern United States was a marginal area with regards to maize culture, and one might expect to find there a survival of archaic traits which had disappeared in the older maize areas. The maize complex of this region did differ in several particulars from those of the Southwest and Mexico, but I hope to show that the traits peculiar to it were either developed independently after the acquisition of maize, or were derived from some older food complex which did not center around maize.

Mexican maize culture was characterized by the use of the digging stick or spade, the grinding of the grain upon a metate, and a considerable use of the tortilla and other maize breads baked upon a griddle. Mushes and other boiled maize foods were less important than in the Southwest and much less important than in the Eastern Woodlands. The corn was usually hulled before grinding by soaking in lime water, although Tozzer¹ mentions the use of lye made from mahogany bark ashes for this purpose.

The Southwestern maize complex had many points in common with that of Mexico and seems to have been directly patterned upon it. The crop was cultivated with the digging stick and the grain ground upon a metate. Breads cooked upon a griddle were

¹ A. M. Tozzer: *A Comparative Study of the Mayas and Lacandonas*, 51, New York, 1907.

important, but there was also a considerable use of mush and other boiled foods. The Mexican method of hulling with lime water was unknown, although the use of lime water in the preparation of some wafer breads may have been derived from it. Hulling was accomplished by boiling or soaking with wood ashes. There were at least two features which appear to have been independent developments; the use of digging sticks with a separate head of stone or horn, and the use of wafer bread. Both of these seem to have appeared rather late in Southwestern history, and the stone-headed digging stick had, for some reason, been abandoned before the beginning of the historic period. The use of yeast may also have been developed independently, but the method of producing fermentation was so much like that used in making fermented corn beverages in the south that it seems more probable that it was received from Mexico.

Eastern maize culture presented several distinctive features. The digging stick or dibble was known throughout the area, but the principal implement used in both the preparation of the ground and cultivation of the crop was the hoe. Some of these hoes were made from single pieces of hard wood, but the majority were provided with separate blades made from the scapulae of large animals, shells, antler or stone. The grain was hulled with lye or wood ashes and crushed with large mortars and long pestles, usually of wood. Stone mullers were occasionally used throughout the area, but the true metate was lacking except on its southwestern edge. Nearly all maize foods were boiled, griddle bread being unimportant, and yeast was unknown.

In view of the marginal position of the eastern maize area, one might be tempted to consider these features as marginal survivals and to expect to find traces of them in the older cultural strata of the Southwest and Mexico. The content of the older Mexican cultures is still very imperfectly known, but the Southwestern cultures have been fairly well worked out and may be used as a check. One of the most characteristic features of the eastern maize area was the use of the hoe. The recurrence of this implement among the Inca and Quichua in South America²

² Erland Nordenskiöld: *The Changes in the Material Culture of Two Indian Tribes Under the Influence of New Surroundings*, p. 24, Göteborg, 1920.

strongly suggests that it was developed at some intermediate point and diffused northward and southward, disappearing, in time, from its place of origin. If this was the case, we should expect to find it in the southwest, but neither the Basket Maker sites of this region nor the later cliff dwellings and pueblo ruins have so far yielded any hoes. Cushing³ mentions a rather secondary use of the hoe among the Zuñi, but one of the specimens he figures seems to be identical with those used by the tribes of the eastern plains, and it seems probable that this implement was introduced into the Southwest in quite recent times. The ancient Bluff Dwellers of the Ozarks, on the other hand, were familiar with the hoe⁴ although most of the other elements of their culture are suggestive of the Southwest. It seems safe to conclude that the hoe was an eastern invention, and the great variety of hoe forms found in the region suggests a considerable age. It is impossible to tell whether the development of the hoe antedated the introduction of maize, but it seems quite possible that it was originally used for digging the wild roots which were an important item in the diet of all eastern tribes. Hoes are better adapted for work in the matted top soil of a forested region than digging sticks, and are still used for root digging by several of the Central Algonkin tribes.⁵ There is a possibility that the hoe was introduced into the east from the Antilles, where it was not unknown,⁶ but its slight importance there makes this rather improbable.

The large corn mortars and long wooden pestles of the Eastern area must also be considered a local development, for they appear to be entirely lacking in the Southwest and Mexico. Mortars of one sort or another were used over the whole of North America, however, and certainly antedate the domestication of maize. If any type of grinding appliance were disseminated with maize, it must have been the metate, which is still used in the older centers of maize culture, and which has been found in Basket Maker sites. It may be significant that the Bluff Dwellers

³ F. H. Cushing: Zuñi Breadstuff, *Indian Notes and Monographs*, Mus. Amer. Indian, Heye Foundation, VIII, 203, 204.

⁴ M. R. Harrington: The Ozark Bluff-Dwellers, *Am. Anthr.*, n.s., xxvi, 6, 1924.

⁵ Alanson Skinner: Personal Correspondence.

⁶ Clark Wissler: *The American Indian*, 2nd ed., p. 23. New York, 1922.

used the metate⁷ although the historic tribes of the same region used the mortar. It seems probable that the eastern Indians had been accustomed to crushing their grain or nut foods in mortars long before the introduction of maize, and continued to use the method, gradually developing new mortar types specially adapted to the new cereal.

The northern use of wood ashes for hulling the grain may represent a survival of an old method superseded in Mexico by the use of lime water, but it seems equally possible that it was taken over from some pre-agricultural food complex. Cushing⁸ says that the Zuñi boiled yucca pods, century plant hearts, and a species of edible root with wood ashes to destroy their poisonous properties, and Parker⁹ says that the Iroquois boiled acorns in lye or roasted them in wood ashes to remove the bitterness. As these wild foods must have been known and used long before the introduction of maize, it seems probable that the use of wood ashes was developed in connection with them and later applied to the new staple.

Preponderance of boiled food in the Eastern maize area may represent an archaic survival, although we have so little information on the prehistoric methods of cooking maize that this is little more than a conjecture. The use of the griddle seems to have originated in the south and probably did not reach the Southwest until some time after the introduction of maize, for no griddles have so far been found in Basket Maker sites.

Of the three maize complexes just described, that of Mexico was unquestionably the oldest and was probably developed on the spot. Any features which it may have drawn from older non-agricultural food complexes were incorporated at such an early time that they can no longer be distinguished.

The Southwestern complex appears to be a direct outgrowth of the Mexican one, and its local developments, such as the stone-headed digging stick and wafer bread, were made along

⁷ M. R. Harrington: loc. cit., p. 7.

⁸ F. H. Cushing: loc. cit., pp. 227, 9.

⁹ Arthur C. Parker: *Iroquois Use of Maize and Other Food Plants*, Bulletin 144, New York State Museum, 101, 1910.

lines already laid down by the Mexicans. It has only one feature, the use of wood ashes for hulling, which can, with any degree of probability, be derived from an older non-agricultural condition.

The Eastern complex, on the other hand, differs so much from the other two that we must either suppose maize culture to have there undergone a local development along lines quite outside those of the original pattern, or consider it the result of the superposition of maize upon some older food complex which was itself rather elaborate. The latter hypothesis seems much more probable, and I believe that the Indians of the eastern United States were already in possession of the hoe and mortar at the time they acquired maize. The wild foods of the region were sufficient to support a considerable population, and it is not impossible that the eastern tribes had developed at least the beginnings of agriculture, for in historic times there were certain practises, such as the planting of wild rice in the north and of various small grains in the southeast, which bore little resemblance to maize culture and may well have originated independently.

The Mexican maize complex seems to have entered the Southwest more or less as a whole. It may even have been brought into the region by migrations from the south, for the archaeological remains strongly suggest such movements. In the east, on the other hand, maize probably arrived as a result of gradual diffusion, lost much of its cultural context in route, and was adopted into a preexisting cultural pattern which had grown up around some other food or foods.

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THE CLAIMS OF INDIA FOR THE EARLY PRODUCTION OF IRON

By GEORGE BRINTON PHILLIPS

IN A PREVIOUS article¹ the antiquity of iron was dwelt upon, showing the knowledge and use of it among different nations and the difficulty of deciding who were the first to produce it. The Iron Age, when tools and weapons were made of iron and steel to take the place of the bronze and copper formerly used, was productive of an enormous advance in the arts and evolution of civilization.

The Iron Age succeeded that of Bronze about 1000 B. C. and at least by 850 B. C. there seemed to have been a well established industry, for at Hallstatt in the Austrian Tyrol a cemetery was unearthed which contained a large number and variety of weapons and other objects of iron. The occasional discovery of objects of this metal which have been found dating back to a greater antiquity have been regarded by different nations as claims to their knowledge of iron, but it was not until the discovery of the Hallstatt find that there was proof of a recognized iron industry. The Cemetery at Hallstatt yielded among the objects of iron long swords, some with bronze handles, scabbards, daggers, broaches, and other specimens and from their peculiar characteristics have given the name of the "Hallstatt period" to similar types found elsewhere.

Another important discovery of iron objects dating from about 500 B. C. was made at La Tène, Switzerland, on Lake Neuchatel. They were swords of shorter length, sickles, socketed celts, spear heads, bars of iron, rings and broaches. The name "La Tène" was given to this type of the iron industry.

It has been rather an open question if there was any racial connection between the people of the Hallstatt culture, and those of the La Tène. By some it is thought the Hallstatt forms which were succeeded by the "La Tène" were established by an

¹ Am. Anthr., n.s., xxvi, 175, 1924.

earlier Keltic race who were replaced about 500 B. C. by newcomers of pure Keltic blood from the Rhine.

The iron industry now continued on through Roman times. Some years ago an important discovery of a large number of iron objects was made at Anuradhapura, an ancient buried city of Ceylon, dating back to 450 B. C. At this site there were tools, weapons, and various implements of domestic use. These were exhibited at the Museum of Colombo, Ceylon. These objects were carefully examined by Sir Robert Hadfield, a distinguished authority on the iron industry, who found in the analysis of one of the tools, a chisel, that it was of hardened steel. This established a claim for the manufacture of steel by these Sinhalese metallurgists of a probable antiquity of two thousand or more years. The number and variety of the iron objects found suggest an advanced as well as extensive, iron industry in India and Ceylon at that early date.

The collection of iron objects found at Tissamaharama, India, included "jumpers" or chisels for boring wedge-holes in stone; pointed "punches" for cutting stone; iron wedges made of five or six thin plates of iron welded together; pieces of a long bar of iron about three quarters of an inch thick, probably parts of a chisel; carpenters' tools of great length, similar to those used by present village carpenters in Ceylon; iron heads of two axes, made by welding together flat plates of iron, with edge of blade 2.8 inches broad; large chisels, small chisels for delicate work, short and thick smith's chisels for cutting iron; besides nails and rivets. Of weapons there were found spear heads and javelin heads, but no sword blades. An analysis of these tools will be a matter of much interest to the scientific world.

In Dr. Buchanan's "Travels in South India" an interesting account is given of the ancient method for the production of wrought iron from the native ores which seems to have been handed down to recent times. He says:

"In the hills of Malabar are found veins and beds of black oxide of iron, mixed with clay and sand. This impure ore is dug out, broken up into small pieces, washed to free it from its impurities and render it fit for reduction. The furnace consists of a mound of clay 7 ft. wide and 4 or 5 ft. long, an excavation or pit made in the clay 3 ft. wide and 2 ft. deep to hold the charge

of ore and fuel, and a hole provided at one side to allow the slag or vitrified matter to run off and a clay chimney placed on top.

"The bottom of the furnace is filled to the vent for the slag with a bedding of sand and charcoal well beaten together, and a row of 8 or 10 pipes of clay with ends projecting inside over the hearth, through which a blast of air is forced by a bellows. The furnace is then filled with charcoal and ignited and the air blown in and a charge of the prepared ore thrown in weighing 2160 lbs. and 20 baskets full more of charcoal added gradually as the fuel burns away. The operation lasts 24 hours, two sets of men work the bellows and keep up a continuous blast. When the mass of iron has formed, the slag is allowed to escape from the hole in the back of the furnace and the front of the structure is broken down, the unconsumed charcoal raked out and the mass of iron allowed to cool gradually for 24 hours, then withdrawn and broken up with large hammers into sword pieces."

Here, then, the iron ore although reduced to the metallic state, has never been melted. It is very impure, porous, and contains unconsumed charcoal and the yield is only from twelve to eighteen per cent. The imperfect operation is due to insufficient blast from the crude form of bellows. The wrought iron now to be purified is placed in another furnace, which is filled with bamboo charcoal and strongly heated with a blast, and the ingot when withdrawn is well hammered on an anvil to clean it of scoriae and unreduced iron. The new purified mass is cut into three wedges, which after being made red hot are well beaten on the anvil, and ready to be made by the blacksmith (after a good deal more hammering,) into various objects. The yield from the ore of good malleable iron is not quite twelve per cent. These Sinhalese metal workers not only understood how to reduce the iron ore to metallic form but also how to convert the soft wrought iron into steel which could be hardened.

"For this purpose good clay was mixed with an equal quantity of charcoal made from paddy husks and having been moistened with water and thoroughly mixed by being trodden under the feet of oxen is picked clean and made into cupels (crucibles) which are slowly dried in the sun. The cupels are loaded each with a piece of the wrought iron and a few pieces of the Tangagic wood and covered with two bushels of charcoal, and burned for six hours, a third bushel of charcoal being added as the fuel is consumed; a pipe from two bellows supplies the air for the furnace. The steel ingots when taken out are heated with charcoal of the mimosa and hammered into small bars."

This process of making steel by what is now known as the cementation method, suggests a survival as tools made of hard-

ened steel dating back 2000 years or more were found in one of the buried cities of Ceylon. It would seem therefore that India may have a just claim to the discovery of steel.

This is not the only claim India has to the early manufacture of iron. Objects of iron of ancient date by other nations were confined to implements of no great size such as sword blades, iron bars for currency, and there seems to be no evidence that iron was used for architectural or constructive purpose; at least the finds at Hallstatt, La Tène and England have not furnished examples of iron manufactured on a large scale for such uses. Although this seems to have been the case in Europe up to Roman times, there is evidence that in India there was not only an established iron industry, but that in the first few centuries of our era, the native metallurgists were able to produce pillars and beams of such size as are now manufactured only with the aid of powerful and complicated steam machinery. The Pillar of "Old Delhi," an old city now a part of "Imperial Delhi," the capital of India, is a most interesting as well as astonishing example of this knowledge of the Indian workman in the manufacture of iron. This iron column resembles a section of the shaft of the propeller of an ocean steamer. It shows with what skill these ancient iron workers were able to produce such results, when it is remembered the work was done by hand without the aid of modern machinery. The iron column measures twenty-two feet above the ground with a diameter near the base of sixteen and one-half inches tapering to twelve and one-half inches at the end. It has a capital three and one-half feet high, consisting of a reeded bell, plain discs and square top which served as a pedestal for a statue of Vishnu to whom it was dedicated. The bottom of the shaft extends eighteen inches below the ground terminating in a knob or bulb resting on a net work of iron bars to which it is soldered and embedded in the stone pavement. At the height of seven feet there is an inscription in Sanscrit deeply cut in the iron, which from its characters suggest the Gupta period. It states that the pillar was erected by King Candra on Mt. Vesnupada and that it was dedicated to Vishnu. From its inscription the pillar dates from 310 A. D. The pillar was removed from its original

site and erected at Delhi by Candra Gupta about the year 415 A. D., where it is now standing near the Kootub Minar monument. The iron column although exposed to air and moisture for many centuries shows no sign of rust and was once from its peculiar color thought to be bronze, and even in late times it was believed by an eminent engineer familiar with castings, to be cast iron instead of wrought iron. Now, however, experts have agreed that the Delhi pillar is made of wrought iron in segments welded together, and this conclusion is proved to be correct by the analysis of a fragment chipped from it.

Analysis of the Delhi Pillar

Carbon	0.080%	
Silicon	0.046	
Sulphur	0.006	Sp. gr. 7 81
Phosphorus	0.114	
Manganese	0.000	
Iron	99 720	
	99.996	

There was no manganese present although usually found in iron. Had the shaft been cast iron it might have analysed only ninety-two per cent iron with about eight of foreign matter, instead of being nearly one hundred per cent pure. When it is remembered that the pillar was nearly twenty-four feet long and sixteen inches in diameter, tapering to the end, and the pieces welded together, (although the welding was not entirely perfect) and the mass weighed six tons, the wonder is how it could have been forged by hand, rounded and tapered and how such a mass of red hot iron could be properly heated for welding in primitive furnaces and how all this could be accomplished without proper machinery. It shows the extraordinary skill these Hindoo metallurgists had acquired that they were able to undertake and successfully complete a work of this size.

Apparently undismayed by difficulties in producing the iron pillar of Delhi these ancient Hindoo iron smiths forged another pillar of twice the length or about forty-two feet. This is the Pillar of Dhar, central India, dating about 321 A. D. and of the Gupta period. The column is now broken into three pieces, the

longest one twenty-four feet, one of twelve feet, and another of six feet; the weight is estimated at seven tons. The portion twenty-four feet long was square, ten inches on a side; the piece twelve feet long octagonal and two feet eight inches in circumference, with ten inches of a circular end showing a piece is missing. The last piece six feet long is a square of ten inches with a bell capital. There is an inscription engraved on the column, in the 44th year of the reign of Akbar (1600 A. D.). It is believed the pillar was entire in 1304 A. D. when it stood at Mandu twenty-two miles from Dhar. It was thrown down by the Mohammedans and broken into two pieces. A century later the longest piece was brought to Dhar, where, about 1405 A. D., it was erected. It was knocked down again and broken in 1531. If it is a problem how these Sinhalese workmen with their crude methods could forge the Delhi pillar twenty-four feet long, it passes conjecture how they could successfully produce a column twice that length, squared and rounded in portions, through its length.

At Konarak in Orissa, India, there are other evidences of iron work on a large scale. Near the building of the Black Pagoda were found fragments of iron beams apparently for structural purposes, some twenty-nine pieces five or six feet long, supposed to have formed the part of twenty complete beams. This temple was built in the ninth century but not completed until the thirteenth century. These beams or girders were manufactured by welding together small masses of wrought iron of three or four pounds in weight. The two largest beams were thought to be thirty-five feet long by about seven and one-half inches square and weighed about 6000 pounds; another beam was twenty-three and one-half feet long by eleven inches square, part of which was broken off, but the remainder weighed 9000 lbs.

An analysis made in 1903 at the Imperial Institute, London, of Ceylon iron made by the *ancient* Sinhalese method of reduction from the ore is interesting for comparison with the composition of the Delhi pillar.

Iron made by ancient method in Ceylon:

Carbon	1.97
Silicon	0.07
Sulphur	0.07
Phosphorus	0.02
Manganese	0.07
Iron	<u>97.77</u>
	99.97

There was another discovery of iron in India that is interesting. An examination was made of the Stone Column of Heliodorus at Besnagar, which dates back to about the middle of the second century, B. C. In excavating at the base of the column it was found to rest on stone slabs in which iron chisels or wedges had been driven by the masons who erected it to make the shaft stand in a perpendicular position. These pieces of metal were examined and analyzed by Sir Robert Hadfield who stated they proved to be *steel*.

Analyses of the wedges gave results as follows:

Carbon	0.70
Silicon	0.04
Sulphur	0.008
Phosphorus	0.02
Manganese	0.02
Chromium	trace
Nickel	trace
Iron	<u>99.05</u>
	99.83

The interesting part was the discovery that the wedges (showing a proper amount of carbon) were *steel*, and could be hardened by heating and quenching. There is still some doubt whether these wedges were the work of Indian smiths or that of the Greeks who may have been in the service of the Ambassador Heliodorus. The analysis differs a little from that of the chisel found at Anaradapura but this difference in composition might be due to a difference in the character of the ore from which the wedges were made. Iron weapons and implements from Vedisa and Taxila have also been found which, when the analyses are published, will throw additional light on the iron industry of India. Judging then from the evidence presented by the large masses of ancient iron and the

collection of various iron tools manufactured by the Sinhalese workmen, it must be admitted that the claims of India as the earliest worker in iron on a large scale is well founded. If indeed she was not the *discoverer* of the *use of iron*, she is entitled to the credit for the early production of hardened steel.

PHILADELPHIA, PENNSYLVANIA.

THREE FACTORS IN PRIMITIVE RELIGION

By JOHN R. SWANTON

IN THE following pages the writer wishes to consider three points regarding the religious conceptions of primitive peoples in which his studies have led him to positions considerably at variance with those of most of the accepted authorities.

The first of these concerns the awakening of the earliest of those conceptions, contention being made that genetic value has mistakenly been given to mere associations. To illustrate what I have in mind I subjoin the following quotations from four prominent anthropologists:

It seems as though thinking men, as yet at a low level of culture, were deeply impressed by two groups of biological problems. In the first place, what is it that makes the difference between a living body and a dead one; what causes waking, sleep, trance, disease, death? In the second place, what are those human shapes which appear in dreams and visions? Looking at these two groups of phenomena, the ancient savage philosophers probably made their first step by the obvious inference that every man has two things belonging to him, namely, a life and a phantom. These two are evidently in close connexion with the body, the life as enabling it to feel and think and act, the phantom as being its image or second self; both, also, are perceived to be things separable from the body, the life as able to go away and leave it insensible or dead, the phantom as appearing to people at a distance from it. The second step would seem also easy for savages to make, seeing how extremely difficult civilized men have found it to unmake. It is merely to combine the life and the phantom. As both belong to the body, why should they not also belong to one another, and be manifestations of one and the same soul? Let them then be considered as united, and the result is that well-known conception which may be described as an apparition soul, a ghost-soul.¹

What we call "physical nature" may very well be "nature" also to the savage in most of its normal aspects; yet its more startling manifestations, thunderstorms, eclipses, eruptions, and the like, are eminently calculated to awake in him an Awe that I believe to be specifically religious both in its essence and in its fruits, whether Animism has, or has not, succeeded in imposing its distinctive colour upon it.²

There are causes originating the belief in charms, rites and spells so simple that nothing could be more natural to the primitive human mind.

¹ E. B. Tylor, *Primitive Culture*, I, pp. 428-9.

² R. R. Marett, *The Threshold of Religion*, p. 14, 1909.

What is more universally powerful in producing belief in the connexion of events, and consequent expectancy of repetition, than an interesting coincidence? If, says Sir E. F. Im Thurn, a Carib sees a rock in any way abnormal or curious, and if shortly afterwards any evil happens to him, he regards rock and evil as cause and effect, and perceives in the rock a spirit. This is animistic; but the same tendency to be impressed by coincidence underlies Magic. For example: A hunting party of Esquimos met with no game. One of them went back to the sledges and got the ham-bone of a dog to eat. Returning with this in hand, he met and killed a seal. Ever afterwards he carried a ham-bone in his hand when hunting. The ham-bone had become a talisman.³

The attitude of the primitive's mind is very different [from that of civilized man]. The natural world he lives in presents itself in quite another aspect to him. All its objects and all its entities are involved in a system of mystic participations and exclusions; it is these which constitute its cohesion and its order. They therefore will attract his attention first of all, and they alone will retain it. If a phenomenon interests him, and he does not confine himself to a merely passive perception of it without reaction of any kind, he will immediately conjure up, as by a kind of mental reflex, an occult and invisible power of which this phenomenon is a manifestation.⁴

That peoples in all ages of the world and on every level of culture have associated religious beliefs with the phenomena of death, dreams, the breath, and startling manifestations of nature is evident enough; what is not evident is that there is a causal connection between the two. If I see a man die and dream of him afterward, why is it an "obvious inference" that he has a life and a phantom divisible from the body? Why should I not accept the phenomenon of death and the phenomenon of dreams on the same basis as any other natural phenomena and let it go at that? Did not Tylor think of an "obvious inference" merely because he knew that the things were in fact associated? Similarly with startling natural phenomena such as "thunderstorms, eclipses, eruptions, and the like." I can see how these might affect primitive man disagreeably and how they might inspire him with terror if he had had any previous experience of them, but physical fear and religious awe are two entirely different things and Marett's assumption of causal connection is altogether gratuitous. Im Thurn's Carib and the Eskimo cited by Read inferred respectively that a spirit resided in a certain rock and magic in a ham-

³ Carveth Read, *The Origin of Man and His Superstitions*, p. 116.

⁴ Lucien Lévy-Bruhl, *English trans.*, New York, 1923, pp. 35-36.

bone because they believed in spirits and in magic as everyone acquainted with the peoples in question knows. But does this fact clothe us with any right to assert that the same deductions would have been made had they not believed in them? Finally, why, in the words of Lévy-Bruhl, should primitive man concern himself to go behind the scenes and conjure up "an occult and invisible power of which this phenomenon is a manifestation?"

The writer's experience with primitive religion would indicate that it cannot be attached to a few objects, phenomena, or emotions to the exclusion of others. Death, dreams, a thunderstorm, an eclipse, the sun, the grizzly bear may excite particular religious interest, specialized as it were out of a general religious attitude, but it cannot, therefore, be concluded that any one, or a few, of them were points of departure for the religious attitude as a whole. Some of them are localized more or less strictly, and in the case of common phenomena such as death and dreams equal regard was not paid to them by all people, nor is it evident that more religious regard was bestowed upon them than on objects confined within narrow areas. It has never been suggested, for instance, that Haida religion originated in the awe in which killer whales were held, or that of the Plains tribes from a bison cult. Emotions toward the dead were probably not precisely the same in any two tribes; ancestor worship is present in some places and wanting in others, and dreams played a greater part in the life of certain peoples, such as the Iroquois and Huron, than was the case elsewhere. It will not do to speak of "obvious inferences" or say that such and such a deduction is "natural." What is obvious and natural is an *association* of the phenomena in question with existing beliefs, not the *deduction* of the latter from the former. The religious attitude itself is evidently one of those primary human factors which cannot be tied down to an origin as specific as even the common experiences of death and dreams. Is not the attempt to do so another example of the "particularistic error" which has been such a potent cause of misunderstanding in anthropology?

The second point to which I would call attention concerns another phase of the error of particularism, the assumed intro-

duction of various elements in the religious complex at successive periods.

Primitive religion includes numerous factors such as magic, supernatural beings in human form usually divided into classes, a world occupied by the souls of the dead, ceremonies, and so on, and it has been a favorite occupation of theorists to arrange these in a time sequence, under the assumption that they were introduced into the religious complex successively. Even when a complete scheme of this kind has not been formulated, one element has at least been picked out as a point of origin for the rest. In consequence we have the animistic theory of Tylor, the ancestor worship theory of Spencer, the "magic" theory of Frazer, the All-father theory of Lang, the social-ceremonial theory of Durkheim, and so on, each of which may be supported by evidence from certain tribes—and confuted by evidence from others. Animism is widely spread, ancestor worship is prominent among the Zulu, the Vedda, and the Papuans, magic among the Melanesians and Central Australians, an All-father cult among the inhabitants of southeastern Australia, and some peoples of America such as the Pawnee and Tsimshian, while many of the Australians again, and the peoples of our Southwest and the eastern Plains tended toward ceremonialism. If one has a theory to establish he can, of course, select as most primitive such of the above as agree with it and he will find enough "survivals" of the same thing in other parts of the world upon which to erect a plausible structure. But, even if certain religious elements are more prominent in one place than in another, where shall we look for peoples having only animism, only ancestor worship, only magic, only an All-father belief, only ceremonies? Generally speaking we find traces of all of them and this is so far true that it would be a fairer deduction to assume that where accent is placed upon one we have to deal rather with a special manifestation. Instead of viewing the religious complex as constructed of parts successively introduced, we might rather consider them as simultaneous manifestations of the religious sentiment, showing greater differentiation here and more specialization there, but properly a unit. There are, of course, numberless concepts and emotional attitudes entering into religious

belief, but let us select a few only of the objective beliefs by way of example, and imagine a complex like the following:

1. Belief in magic (mana, orenda, etc.).
2. Belief in numerous anthropomorphic beings which have never lived as men (gods, nature spirits, etc.).
3. Belief in a difference in power between these, frequently culminating in the idea of a superior or supreme deity (a germinal monotheism).
4. Belief in supernatural beings of human origin but more than human power (demi-gods, saints).
5. Belief in disembodied souls of the dead (ancestors), etc.
6. Belief in embodied souls with greater powers in connection with things supernatural (priests, prophets, shamans).
7. Belief in souls embodied in human beings generally.

According as one of these elements is expanded at the expense of the rest we would have manaism, polytheism or animism, monotheism, saint worship, ancestor worship, or sacerdotalism, but traces of the other elements of the complex are almost always to be found. This is true of civilized, barbarous and savage peoples alike. Thus the Haida of the north Pacific coast made use of magic (1), believed in a number of animistic beings both in and apart from nature (2), distinguished these into classes differing in power and headed by a heaven god (3), believed that some of these beings had formerly lived as men (4), in the existence of souls embodied in human beings and continuing for some time after having left their bodies (5 and 7), and in shamans (6).

Among the Natchez we again appear to find all of these factors represented: magic, supernatural beings, a supreme solar deity, superior men embodied and disembodied (the members of the Sun caste and medicine-men), and souls of ordinary men embodied and disembodied.

Turning to civilized people we find that while Christianity is ostensibly a monotheism, polytheistic tendencies are encountered in connection with the doctrine of the Trinity and in that interpretation of angels which would make of them independent beings between the world of God and the world of men. If magic is in some measure suppressed it has yet played its part, belief in saints is common and that in disembodied souls universal. Mohammedanism professes to be even more highly monotheistic but it does not exclude belief in spirits of various classes such as jinns and peris,

a profound reverence for Mohammed and for saints, and the use of magic. In China a relatively lofty worship of Heaven exists side by side with similar beliefs in powers of lower order, a proverbial ancestor worship, and a highly developed magic. Hindu religions, while recognizing a supreme deity, lesser deities, and magic, have taken a special slant toward pantheism, and have provided, not merely for the translation of men to a level with the gods but to a position above them. Zoroastrianism, although specifically a dualism, shows the same general categories, and this will be found true of most of the other advanced forms of faith.

When we consider the limitations and dilutions of monotheism above indicated, the difference between the monotheistic religions of more developed peoples and those primitive cults which include the idea of a superior or supreme deity is not so great. Such a conception, usually associated with the sky or the sun, is, indeed, surprisingly common. In America may be cited the beliefs of the Quechua, the Pueblos, the Creek, the Iroquois, the Ojibwa, the Siouan tribes of the southern Plains, the Pawnee, the Haida, Tsimshian, Kwakiutl, and Salish. In Africa a supreme deity of a certain type appears among the northern and north-eastern Bantu and the Hamites of the East, besides many of the true Negro tribes of the Sudan. In Asia it occurs among certain Siberian peoples; in Europe among the Greeks, Romans, Teutons, and some of the Slavs.

Its occurrence among certain races regarded as most primitive from other points of view is still more surprising, peoples such as the natives of southeastern Australia, the Negrillo, and even the Bushmen and Andaman Islanders. Therefore even the assumed advanced monotheism, or something very close to it, may have originated in various parts of the world at an early date through specialization out of the third element of the complex above given. Naturally we should not look for its higher philosophical connotations but it is doubtful whether its more exoteric side presupposes as much mental advance as has been held necessary. At any rate I feel sure we shall be nearer the truth if we regard "the evolution of religion" rather as an expansion and

differentiation of a complex such as has been suggested than a successive introduction of such essential and widely spread elements.

Thirdly, I wish to utter a complaint against the indefinite use of the term animism. Apart from magic pure and simple, the objects in nature toward which primitive man exhibits religious emotions always contain a human element, and therefore the term animism is not sufficiently specific unless it is just that which we are to understand. Still less is it necessary to coin another term, animatism, as suggested by Marett. Either an object is a *thing* with magical properties or there is something human about it. In the former case you work it like a machine by knowing the combination. If you know the combination it will respond, but if it has any choice whether it will or will not respond, it is the seat of, or under the control of, a being with human mentality. When the human form is associated with this being, it is spoken of as anthropomorphic, but when the human form is not so prominent the term anthropopathic is sometimes employed. However, there is, after all, but little difference, because the assumption of human mentality constantly suggests the form in which it ordinarily appears to us, and when the human mentality has been once attributed to anything a being human in every other particular frequently evolves from it. In the regard in which animals are ordinarily held by primitive men there is no more of religion than in our own; whenever religion enters it is because a human mentality is ascribed to them. The Indians of our north Pacific coast are thus perfectly consistent when they speak of their animal deities as removing their skins and appearing in human forms when they are at home. Myths in other parts of the world are full of the same thought, and even when the animal guise is retained the human mentality is apparent. An interesting example of this is the Haida belief connecting points along the coast of their island homes with killer whales containing anthropomorphic beings. The last mentioned are incarnated in the killers and the killers in the points, the same name being applied to each point, the killer living under it, and the anthropomorphic

being in the killer. A casual visitor to the islands years ago might have imagined at one time that these people worshipped natural features, at another that they worshipped killer-whales, when in fact it was the anthropomorphic incarnation in each. Much of the confusion on this point among anthropologists is due to the fact that the anthropomorphic element in the native concept is not equally clear in all cases. Sometimes the man-deity is perfectly distinct; at others he is ill-defined. But the actions of the believer in each case should indicate pretty clearly whether we have to deal with an anima or with magic. The two ideas are themselves perfectly distinct and perfectly intelligible, however much the primitive man himself may seem at times to confuse them.

My conclusions on the three points just discussed are, in brief, (1) that the deduction of religious concepts or emotions from natural phenomena, however closely they may be found associated, is unproved and improbable; (2) that the history of religion has probably consisted in the differentiation of various elements from an original complex and the varying stress placed upon those elements rather than the successive introduction of new elements; and (3) aside from pure magic, the religious attitude toward natural phenomena consists in the ascription of a human element to them.

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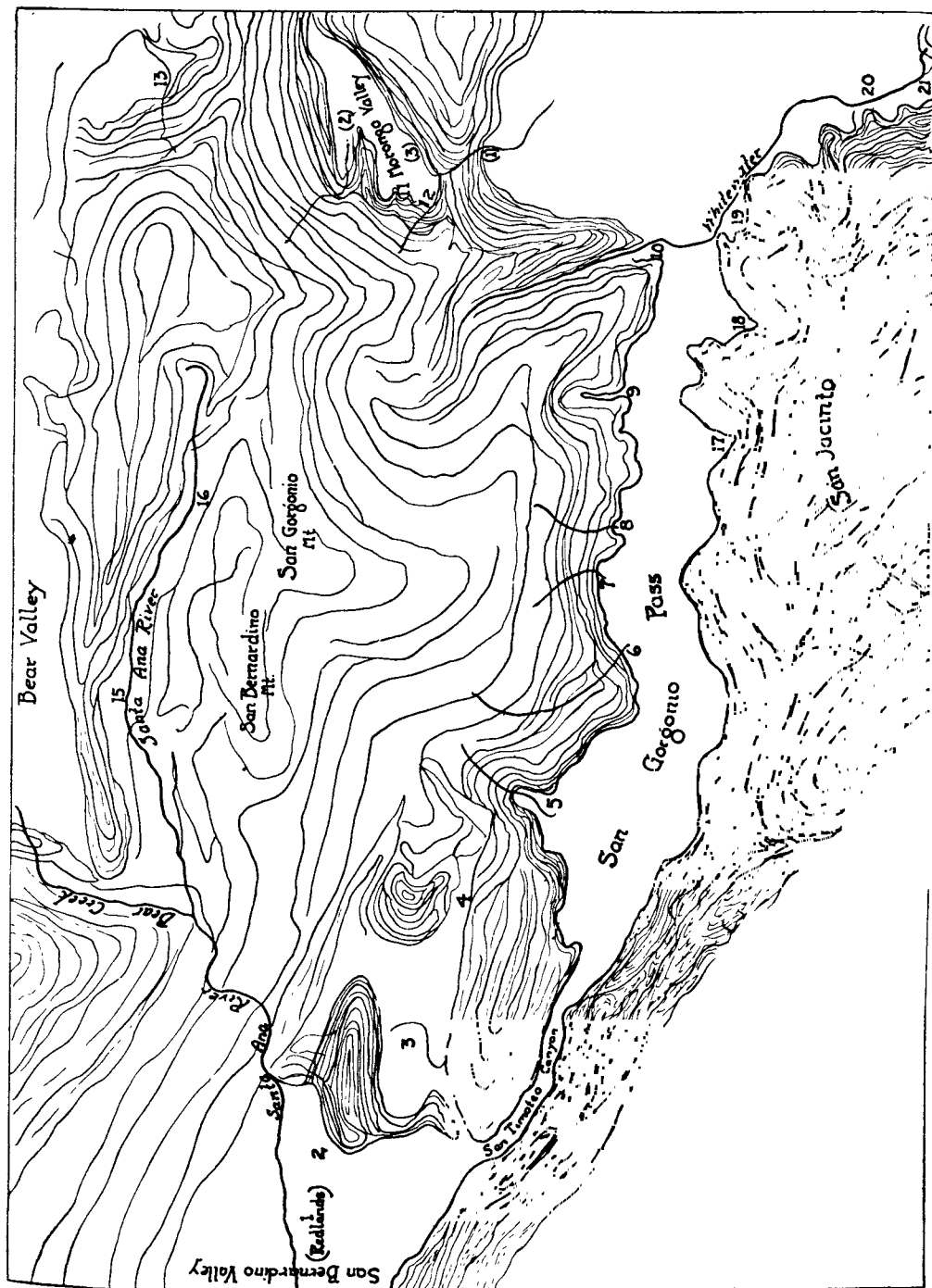
A BRIEF SKETCH OF SERRANO CULTURE

By RUTH FULTON BENEDICT

THE SERRANO, one of the several dialectic groups of Southern Californian Shoshoneans, live in Riverside and San Bernardino Counties, California. The information in this paper was obtained in 1922 at the Morongo Indian Reservation in the San Gorgonio Pass near Banning. By far the fullest account was given by Rosa Morongo, who was born about seventy years ago at Akavat, north of Beaumont, and who married Captain John Morongo of Mission Creek, chief (*kika*) of the Maronga band.

The Serrano of the San Gorgonio Pass were familiar with the distribution of peoples of their dialect from Redlands east along the northern slope of the Pass to Twenty Nine Palms, a distance of about one hundred and twenty miles; three local groups at the base of Mt. San Jacinto along the southern slopes of the Pass; and two local groups north of the San Bernardino Mountains, in the southern Bear Valley region. The emphasis in this paper is upon the eastern, or Morongo Valley, Serrano. They are probably the only bands whose life can be reconstructed to any extent today. The western settlements removed almost bodily to the Missions, and at the secularization in 1834 there were apparently too few survivors to re-establish tribal life. A very few returned to Akavat, north of Beaumont, Mrs. Morongo's birthplace, but it was in the eastern regions of the pass that native culture survived, though even here some Indians had been at the Missions.

Such information as may be gathered among the Serrano today is almost entirely exoteric. No old shaman (*hūmtc*) or priest (*paha*) survives. The annual fiesta is still kept up in a modified form, and until a few years ago the Morongo Reservation Serrano depended on a shaman of the desert Cahuilla for some of the old dances and shamanistic performances. A great deal of the old meaning, both in social organization and in religious



The Territory of the Serrano
(Top is north; east-west distance about 34 miles.)

practices, is undoubtedly lost. It is largely by guess-work that they can give the meaning of any of the ceremonial songs; and any religious connotation in such practices as rock-painting, for instance, is now unknown. It must therefore remain an open question in many cases, as for instance the universal animal designations of all local groups, whether the absence of any esoteric interpretations today is the reflection of an old Serrano trait, or is due to a fading of the old traditions.

SOCIAL ORGANIZATION

The country known to the Serrano was habitable only in those spots where water was available. Along the southern slopes of the San Gorgonio range occupied sites were near the valley openings of the small canyons that intersect the range. Only near the two extremes, at Yucaipa and at Morongo Valley, was space available for more than a small number of families. At these two places, well-watered valleys run back into the mountains.

Local Groups. The local groups from west to east along the pass are as follows. (See accompanying map.)

<i>Local Group</i>	<i>Place name</i>	<i>Location</i>	<i>Anima designation</i>
1. Wa'atcavitum	Wa'atcavit	Redlands	Wildcat
2. ?	Tukut	Crafton	Coyote
3. Yukaiviatum	Yucaipa	Yucaipa Valley	Coyote
4. Tūpamukiyam	Tūmūnamtu	Foot of Hog Canyon north-east of El Casco	Wildcat
Tamakuvayam			
5. Pavūkuyam	Akavat	Opening of Beaumont Canyon	Coyote
6. Pihatūpayam	Pihatūpiat	Opening of Banning Water Canyon	Coyote
7. Long extinct tribe	Marki	Opening of canyon at reservation*	Coyote
8. Waqūxiktam	Waqūxi	Cabazon	Coyote
Wanapūpayam			
9. Palukiktam	Palukiki	Stubby Canyon (known as Lion's Canyon)	Coyote
10. Wanapūpayam	Wanūp	Whitewater, at canyon mouth	Coyote
Ismailēm†			
11. Maringa	Yamisevul and Maringa	Mission Creek, at canyon mouth At opening of Big Morongo Creek into Marongo Valley	Coyote
	and Tūrka	Morongo Valley, along the present road	

12. Mühiatnim	Mukunpat	Opening of Dry Morongo Creek into Morongo Valley	Wildcat
13. Atü'aviatum	Hupatcam	Now The Pipes, 10 miles back in the mountains from Maringa	Wildcat
14. Mamaintum	Mara	Twenty Nine Palms	Wildcat
North of the San Bernardino Range in the Bear Valley country:			
15. Püviatum	Yuhaviat	The Pines, on Santa Ana River	Wildcat
16. Kutcaviatum	Kutcaviat	Big Meadows, or below, on Santa Ana River	Wildcat
On the south slopes of the San Gorgonio Pass, along the north base of Mt. San Jacinto:			
17. Hunuwaktum	Hunuwat	Canyon opening just north of Cabezon Peak	Wildcat
18. Tütcanixiktum	Tutcaxa	Snow Creek Canyon at mouth	Coyote
19. Wakaxixtam	Wakaxix	Blaisdell Canyon	Coyote

* This site occupied in more recent time by a group of Wanapüpayam from Whitewater.

† This is the Cahuilla name for this group. They had no collective designation for themselves.

Each of these local groups had its own tribal and ceremonial officials (with an exception in the Morongo Valley to be noted later), its own ceremonial house, and tribal ceremonies, its fixed ceremonial affiliations with other groups, and a fixed band or bands with which marriage could be arranged.

Hereditary Officials. Each local group has two hereditary officials, the *kika*, chief, and the *paha*, supervisor of the tribal ceremonies. The only exception to this arrangement was in the Morongo Valley and the foothills of Mission Creek which adjoin it. This was the home of the Maringa-Mühiatnim-Atü'aviatum groups, which were complexly interrelated. Tribal officials were specialized in this region, the Maringa and the Atü'aviatum having a chief but no *paha*; and the Mühiatnim having a *paha* who served the ceremonies of both the other groups. The Mühiatnim had no ceremonies of their group alone, since they had no chief and it was impossible to call a ceremony except through a chief. The Maringa and the Atü'aviatum were responsible on alternate years for the annual Mourning Ceremony which opened the calendric ritual year for all the Serrano peoples.

Ceremonial Organization. These local groups formed four ceremonial units. The members of these units assembled for and

played a fixed part in their annual fiesta. Each group reciprocated by acting as hosts to all the other members of the unit at their own annual fiesta. These ceremonial affiliations were geographically distributed, the groups in some cases overlapping. There were four ceremonial units:

1. Redlands and Yucaipa district, including local groups 1-4.
2. Beaumont to Whitewater district, including local groups 5-10.
Tamakuvayam (map:5-8.), Wanapüpayam (map:9-10.)
3. Cabezon to Twenty Nine Palms, including local groups 8-16.

This overlaps with the preceding ceremonial unit, and includes the two bands from Bear Valley (Map: 15 and 16) as well as the following Cahuilla groups:

Kayúkuyam, of Palm Springs. (See map: 20.)

Páhiniñayam, of Palm Springs Canyon. (See map: 21.)

4. Southern slopes of the pass, groups 17-19.

Marriage Relations. Nothing is known of the traditional marriages of the Redlands and Yucaipa region.

It will be noticed that local groups 5-10 are designated by two names, Tamakuvayam and Wanapüpayam. Marriage was between these two groups; that is, any local group of the Támara-kuvayam could marry into any local group of the Wanapüpayam. Choice was not entirely free within these limits, however, it being necessary to avoid the local group of one's mother.

The Ismailem—Maringa, Mühia'tnim, Atu'aviatum—formed a second endogamous group. Marriage was arranged with that one of the three bands to which neither one's father nor one's mother belonged.

A third endogamous group was formed by local groups 17-19.

It is undoubtedly significant that no hesitation was shown in assigning to any group its animal designation. Even where the proper marriage affiliation had been forgotten, the fact that they were "coyote" or "wildcat" was unclouded. It was said that these designations were used in speaking of the different groups, and it was pointed out that the custom obtained also in the case of non-Serrano peoples: thus, Cahuilla groups were referred to as "mountain lion" (wanatc); the Kayukayam (Palm Springs Cahuilla) as "wildcat" (tukum).

Certainly there seems to be no reason for referring to these designations as moieties. And any totemic connotation seems likewise to be absent. It has been recorded¹ that "coyote" people are reputed swift in their movements, "wildcat" people slow and lazy in theirs; but this certainly only meant, to my informants, that the group was aptly nicknamed. It did not imply any concept of descent, or any theory of participation in the nature of the eponymic animal. Nor was respect shown the animal in any way; there was no taboo on killing or eating; and their myths show no sort of identification.

Descent and Marriage. Descent was patrilineal. Only in cases where the father is white is descent counted through the mother. Residence was always patrilocal.

Marriage was arranged by the parents, sometimes soon after the child was born. When a girl had passed through the adolescence ceremony and it was considered time for the couple to live together, the man's immediate family sent presents to the girl's father; a rich family would send a couple of horses or a couple of cows, and poorer families in proportion. There was no gift from the girl's family.

There was no ceremony at marriage. The girl simply went to live at the house of the man's father. After a time they built a house of their own.

Arrangements for marriage were said to be wholly the concern of the immediate family; neither the tribal or ceremonial chief was consulted.

Polygamy was rare; it usually occurred in cases where the first wife had no children, or where the husband was an especially good hunter and married his wife's younger sister.

After the death of her husband, a widow stayed in her father-in-law's house unless there was good reason to move. She usually married her husband's elder brother, but this was not obligatory.

Personal names. Given names of both men and women descended in the father's line, and were given to children at the

¹ E. W. Gifford, *Clans and Moieties in Southern California*, U. C. Publ. A.A.E., xiv, 178, 1918.

local group's first annual ceremony after their birth. They had sometimes reference to the local group, as in the following names of the Maringa:

Maringa anaita, female name, an old word meaning the sacred feathers of the Maringa.

Maringa u'uevam, female name, having reference also to the sacred feathers.

Maringa auta, male, an old word meaning some color of the Maringa.

Names, however, need not have local group reference; the following were cited:

Pohinü anvam, a Maringa woman's name; no meaning.

Kivéva, an Atü'aviatum woman's name.

Koméva, an Atü'aviatum man's name.

Hinga, an Atü'aviatum woman's name.

These names were the ordinary ones by which people were known about the house. They were not, at least to present-day informants, in any sense secret or "enemy" names. These traditional names are now very largely forgotten.

Joking Relationship. The family, along with its remoter connections, is bisected into joking and respect relatives. All relatives of one's own direct line, and their siblings of the same sex, belong to the category to which respect is due; all siblings of opposite sex (mother's brother, father's sister, grandmother's brother, etc.) to the joking category. Their children have the status of their parents. Thus cross-cousins, to the third and fourth generations are joking relatives; parallel cousins, respect relatives. This holds reciprocally also, so that a man never jokes with his brother's children, nor a woman with her sister's. At marriage the husband and wife assume each other's joking categories. In the small communities that were the rule among the Serrano, then, from the point of view of any single individual this differentiation of status practically bisected the entire community.

This joking-respect status was sociologically of the greatest importance, and is accurately reflected in their relationship system. This has been fully recorded² and presents at first

² E. W. Gifford, *Californian Kinship Terminologies*, U. C. Publ. A. A. E., xviii, 54, 1922.

glance the appearance of being dominated by a conventional scheme of unilateral descent such as is most often found among tribes that are organized into exogamic moieties. But there are difficulties. In a moiety classification, for instance, the wife's mother's brother is necessarily of the speaker's moiety; among the Serrano, he is known by the same term, *pründj*, as the wife's father's sister (who would be of the opposite moiety), a term whose first connotation to the Serrano is of the joking status it denotes. The essential point to the Serrano is that both are siblings opposite in sex to the direct ancestor through whom relationship is traced.

This same term also in other uses illustrates very precisely the principle of classification in Serrano relationship. In a moiety classification the grandfather and his siblings would be opposed to the grandmother and her siblings; empirically we find ordinarily in North America that the third generation is not differentiated. But among the Serrano it is; the grandmother's brother and the grandfather's sister are separated out from the direct line, and designated by the same pair of joking terms which designate also, among other relationships, the wife's mother's brother (as above) and her father's sister. In every case the essential point is that the person designated is a joking relative, by virtue of being of sex opposite to that of the direct ancestor through whom the relationship is reckoned.

In the social life of the Serrano today this joking relationship is by far the most obvious survival of the old cultural life of the tribe. In any group the mutually derogatory attitude between stated persons is obvious. I have never seen it take any forms of license. Its chief function in their minds was obviously that it employed ridicule against offending members of the tribe. "One's joking relatives would laugh" was the ordinary phrase in discussing lapses from custom.

CEREMONIAL OBSERVANCES

Ceremonial Requisition of Food. The first concern in all ceremonial arrangements was the custom known as *witc-at*. When any

ceremony was to be given, for instance, a shaman's ordination, the person who desired the ceremony went to the chief, who through the *paha* informed all the people of the plans, and told them all to "witc-at", that is, bring a set amount of food to provide the feast. This requisition was always in mesquite or other seed-flour; the person who set the ceremony in motion furnished the remainder of the food.

Giving Thanks. Thanks for all first-fruits, and the ordinary ceremonial gesture, was a sowing motion. (Contrast the Cahuilla offering to the six directions.)

Annual Ceremony. The outstanding ceremonial of the Serrano groups is the composite of dances and observances culminating in the mourning ceremony. A fixed number of local groups, including two Cahuilla groups, co-operated in this ceremony. These were, fifty years ago, (see *Ceremonial Organization* for complete list):

The Maringa-Mühiatnim-Atü'aviatum group, of which the Maringa and Atü'aviatum groups were responsible for the ceremony on alternate years, assisted in each case by the Mühiatnim *paha*.

The Wanapüpayam, west of the Maringa.

The Mamaintum, east of the Maringa, at Twenty Nine Palms.

The Kayukuyam, Cahuilla of Palm Springs.

The Pahi'ninayam, Cahuilla of Palm Springs Canyon.

The Pü'viatum, Serrano of Bear Valley.

The Kutcáviatum, another Serrano group of Bear Valley.

Of these the last two have been extinct for many years, and the last representative of the Mamaintum has recently died.

The first group must always lead off in the ceremonial series, in October. I shall describe the ceremony as it was given by this group.

The responsibility for the ceremony of this Morongo Valley group was taken on alternate years by the Maringa, and by the Atü'aviatum. The chief of each group however contributed to the fiesta provisions every year. This is now standardized in the requisition of two bags of flour apiece from the chief of each group. In old times, first-fruits of every harvest were given him for use in this festival. These provisions are turned over at the

time of the ceremony to the *paha* of the Mühiatnim group, but this group never contributes, unless on account of a death among its number. For in addition to the meal contributed by the chiefs an equal amount is given by every family which belongs to the group giving the ceremony and which has lost a member by death during the year.

The chief of the group presiding any one year calls the ceremony through his messenger, the *paha*. It begins on Monday morning, and lasts through Sunday morning. The first three days, however, are concerned with providing the materials for the feast. Even today some of the women spend the time in the gathering and preparation of the seeds as formerly, and some of the men hunt rabbits to provide the meat. The rabbits have no ceremonial significance in this connection, but are a customary part of the feast.

The ceremonial house, *kitcatii'atc*, is open during these days, and old stories are told there, and the men may play peon.

The first great event of the week is the all-night ceremony on Wednesday when the feathers are brought to the ceremonial house. These are the most sacred possessions of the Serrano, and are kept during the year under the care of the *paha* in a secret cave in the mountains. The ceremony on Wednesday night begins with a great supper. After supper they sing, led by the ceremonial singer, the *tcaka*, an hereditary officer, a Maringa, until at the direction of the *paha* all lights are extinguished, and the assembled people wait in silence till the feathers are brought. They first know that the feathers have come when they hear the *paha* praying in a peculiar voice in the darkness. The words are indistinguishable, but what he says concerns the beginning of things. This lasts about an hour. Then the fires are relighted, and the feathers are hung around the room. In old times the *paha* and other dancers danced with the feathers at this time, but the last man who could dance this dance died twenty-five years ago. Besides, the feathers are falling to pieces now, and require very careful handling.

The first songs that are sung after the fires are relighted refer to the taking of the toloache drink, *manitc*, though no one now living has any memory of any connection.

"Musüka (said to be an esoteric word for soul)
Musüka,
Take the manitc.
We shall depart (said to refer to loss of consciousness)
But we shall not die."

The second:

"Behold,
We have drunk the manitc.
We are restored again."

There were a number of songs for the dance with the feathers the words of which are variants of the phrases:

"Up and down, up and down.
We dance with the feathers."

Women dance the first half of this night; men the second.

The feathers are left hung about the ceremonial house for the remainder of fiesta week. They are never brought out on any other occasion. In the late afternoon of any day while the feathers are displayed, a special ceremony may take place. The *paha* swings the bullroarer in the ceremonial house; this is a signal for silence, and no one must look to see whence the noise comes, or by any chance see the bullroarer. If he does, he is tied up with the sacred feathers, and remains so until his family pay to have him released.

On Thursday all children born during the year are brought to be named. Whichever group, the Maringa or the Atü'aviatum, is responsible for the ceremony that year, all children of both these groups and of the Mühiatnim are named each year.

The names are selected out of the stock of personal names belonging in the father's line. They are the names by which the children are commonly known thereafter in the family. There are no secret names.

At the ceremony the members of the immediate family of the child distribute money and lengths of calico by tossing them among the guests. People used to be lavish in these gifts. The ceremony begins with singing and dancing. Then the *paha* takes each child in turn, sings, and in former times danced with it, and just before the child is returned to its mother, the name is called out by the chief of the group giving the ceremony that year.

Thursday night people sleep.

Friday the eagles are killed. Young eagles were formerly taken from the nests, and cared for by the *paha*. Rabbits and other food had to be taken to him for the eagles by men of the group. The birds are strangled at the fiesta, and the feathers used to decorate the images of the dead which are burned on the last night. Other eagle feathers were used for the sacred dancing feathers, but the feathers of the eagles killed at this ceremony are not known to have ever been so used. The men sit in a circle, and the *paha* slowly strangles the birds. The feathers are removed, and those who are making the images of the dead each receive some.

The images or "dolls", *tü-iv* (ghosts), must be made on Friday afternoon. The immediate family may make the image representing the relative who has died that year, but it is more usual to pay someone outside to make it. There is no restriction on the group-affiliations of the person who is paid to do this service. The images are about life-size, and in former times were dressed in as excellent material as the family could afford to make or buy. Ten-cent pieces are sewed on for eyes, and the eagle feathers used to decorate the head.

Saturday was the day for the dance known in English as the Eagle Dance. The Serrano word for it is *tuwituaim*, meaning simply "dance". It has for them at present no association with the eagle. The dance has not been danced by a Serrano for twenty-five years, but a shaman of the Desert Cahuilla used to come to dance it sometimes at fiestas until rather recently. In old times the boy who won in the race at the toloache ceremonies was supposed to be trained for this dance. It was a whirling dance, and required much skill. The dancer always painted, though with no particular pattern. Much red was used, and also black and white. A feather costume was used, but not the sacred feathers.

Saturday night is the great all-night ceremony. The Wanapüpayam sing their songs the first half of the night; the Kayukuyam the last half. The mourning ceremony proper begins rather more than an hour before sunrise with the distribution of meal to the heads of families in the invited groups. The *paha* is the distributor. It will be remembered that the chiefs of the Maringa and of

the Atü'aviatum, and the heads of all families in these groups and the Mühiatnim who have lost members by death during the year, contribute an equal quantity of meal to the fiesta. From each of these quantities of meal the *paha* distributes one panful each into the apron of the leading woman of the principal households of the groups that are ceremonially invited to the fiesta. This is an hereditary privilege. Other families among the visiting groups may be included in this distribution if they have lost a member during the year, but this is a voluntary honor done them by the group which acts as host, and they cannot complain if it is omitted.

The images, *tü-iv*, are now brought out, each by a woman not in the immediate family of the deceased. Usually the woman who dances with the image is a member of the same group, but the family usually pay for this service, and there is no restriction on the social group of the person who takes this place. They march around in procession carrying the life-sized images before them under the arms, and then form a circle outside the ceremonial house. The dance is a bending motion with a rather pronounced resumption of the upright position. It lasts about half an hour. The songs are repetitions of the following:

"Tü-iv (i. e., images; spirits of the dead; evil spirits) will go away in flame;
Tü-iv will go away in smoke.
Tü-iv have departed;
They have gone away in the burning."

At the conclusion of the dance and singing, which was accompanied by wailing, the dancers put the images on a pile of wood which was kindled by the *paha*, and burned. It was the signal for money and calico to be thrown among the guests by the members of the bereaved families. Other things of some value were also thrown upon the fire, but most was tossed promiscuously among the people.

After the burning, the chief, through the *paha*, gave the sacred strings of shell beads, *uk'*, to the chiefs of the local groups which make up the ceremonial unit which is traditionally present at this ceremony. The old list of such groups attending the Maringa ceremonies has been given under *Ceremonial Organ-*

ization. Many of these bands have become extinct, and in 1919 beads were given to the Wanapüpayam, the Mamaintum (Twenty Nine Palms), the Kayukuyam (Cahuilla of Palm Springs), and the Pahininayam (Cahuilla of Palm Springs Canyon). The Mamaintum have since become extinct. The beads, *uk'*, which are given at this time are mentioned as original possessions of the Serrano in the myths, and in certain songs. They are also identical with the beads which were formerly used as currency. Such beads were buried in as large numbers as possible with the dead.

If a death had occurred in one of the visiting groups which it was desired to notice with honor, an additional string of beads was given to the chief of the bereaved group, one for every death that had occurred.

The ceremony was now over. This Maringa ceremony was given always in October, and the visiting groups followed in turn in reciprocating as hosts in their own mourning ceremonies.

Deer Ceremony. Whenever a deer was killed, an all-night ceremony was held in the ceremonial house. Rosa's husband was a great hunter and whenever he brought in a deer, his father who was chief and lived in the "big house", made a ceremony. He sent word to the *paha*, and all the people were summoned, and they sang and smoked and danced all night. In the morning the carcass was cut up, and could be distributed.

Observances at Eclipse of the Sun or Moon. The first person who saw an eclipse of either the sun or moon raised a shout which was taken up by everyone. The whole group gathered in the ceremonial house and the *paha* and the shamans sang and danced till the eclipse was over. Any one could join them. Eclipses were caused by the *tü-iv*, the spirits of the dead, who were believed to be eating the dark portions on which the shadow fell. Food was not touched during the time of an eclipse; any one doing so was assisting in the eating of the sun or moon, and was in league with the *tü-iv*.

It was believed also that with the spirits of the actually dead, there were also spirits of those not yet dead, who were likewise present at the eating of the sun and moon. Only shamans could

tell whose souls had thus left their bodies on this occasion, but if these souls (*a'hat*) were not caught and restored, the death of the person would soon follow. The soul of a living person left the body in this way when a falling star was seen in the sky. Takwite, the low-flying meteor, stole souls constantly. (See lost-soul ceremony.)

After the eclipse was over, people bathed themselves, drank decoctions of the bitter herbs, *po-od* and *hutcavat*, washed their hair in this liquid, and partook of a feast set out to break the fast.

Observances in the Life of Women. The hot sand-pit was associated with most crises and diseases in the lives of women. At adolescence a pit was dug long enough for the girl to lie in, and several feet deep. In this a fire was lighted and rocks put in to heat. When the stones were hot, sand was shovelled in, and raked about till it was evenly warmed. The girl was then brought out, and lay down in the pit, and the hot sand was shovelled over her up to the chin, and a basket-hat placed over her face. When the sand cooled, more sand was heated near by, and thrown on the pit. The girl stayed in the pit usually not more than one day. When she came out she was given a great drink of bitter herbs, warmed, either *po-od* or *hutcavat*, and her hair was washed in the same liquid. She was bathed in warm water, and stayed in bed in the house in the charge of her grandmother, for four or five days. She saw no one during this time, drank only warmed water, ate no meat, nor anything flavored with salt. She was not allowed to scratch her head with her fingers, and was provided with sharpened pieces of wood for the purpose. Also, she must not step on wood. All of these taboos, except the strict isolation, were continued for indefinite periods after the girl was about again, depending on the strictness of the grandmother and the ambitions of the girl.

This observance was a strictly family one. The father's mother took charge, and members of the family might sing or even dance, but no shaman was called. This is to be distinguished from the tribal ceremony at which the daughters of chiefs or *pahas* or other leading families went through a similar, but more

elaborate ceremony in charge of the *paha*, assisted by the shamans. This was performed in order to make them especially smart women. At this ceremony the women danced, and the men sang. It has not been given for many years, but it is said to have taken place at the same time as the boys' toloache drinking. This "baking of girls" was known to the Serrano as *waxan*.

Menstruating women were always associated with bad luck, and are so still. This was equally true of pregnant women. The same taboos held for both in good part. They must eat nothing containing salt; no meat; and drink only warmed water. A menstruating woman must sit apart, but need not leave the house. She did not cook for others, and had her own cooking vessels.

A pregnant woman should be industrious that her child might not be lazy; she should not eat any fruit that has been pecked by birds, nor swallow an ant or a worm lest her child should have sores.

Birth was usually attended by some woman who had a reputation as midwife. As soon as the child was born, mother and child were both placed in the hot sand-pit. The child's head was bound up to emphasize the head-shape most admired by the Serrano and which they call round; that is, elongated backwards. Hot sand was kept especially at the child's head, and it is said to be in order to insure this head-shape that the child is placed in the pit.

On the first day of the child's life the ceremony of making the child's cradle takes place. The child's paternal grandparents give a feast, and throw away money and calico, and make the cradle board together. This ceremony acknowledges the child's paternity, and gives it a place in its father's local group.

Mother and child remain in the sand-pit till the navel string drops off, said to be about four days. Then they are taken out, the mother is bathed, and her hair washed in bitter herbs. The child's navel string is buried near the house. This is said to make the child healthy.

There was no special feeling about twins.

There are no restrictions now remembered on the conduct of the father either before or after the birth of a child.

Observances at Death. When anyone was near death, an attempt was made, if possible, to remove him to the ceremonial house. It is said that doctoring was continued here until the patient was actually dead, and that wailing did not begin before this. The body was prepared for burial by anyone whom the family paid to perform this service; there was no restriction on the family group to which they must belong. Bodies were buried with as many shell beads as possible. These were the old currency, and had also ceremonial significance.

Destruction of property began immediately, but there was a special ceremony a week, or it might be a month, after the burial. This was called *mamakwot*, and was given by the bereaved family. A feast was provided, and everything belonging to the deceased was gathered together and burned, and broken, and torn to fragments. When old Rosa Morongo's mother died, about twenty years ago, her son went back to the Mission Creek country and searched out all her ollas standing on the ridges of the foothills. One was overlooked, and her grandchildren found it a few years ago on a trip to the Kayukuyam annual ceremony. They intended to take it home with them, but when the shamans heard of this, they said they could hear wailings, and took the olla forcibly and broke it.

SHAMANISM

The shaman (*hümtc*) of the Serrano was always the psychically predisposed person. It was "like a talent"; he was "different from the time he was born." When he was a child he had dreams, and "saw things" other boys did not see, and ran and told his mother. Old shamans could tell what children would be *hümtc* when they grew up, but they never told.

A shaman's powers came from *kwatc-ti-muk*, the usual word for dreams. But he had these in the day-time as well as at night. He had them out hunting, and he had them when he danced himself into a trance at the fiestas. No distinction seems to have been made. A dream in the night might give as much authority as a trance.

These experiences were always involuntary. Any means by which a dream or vision should be deliberately sought seems to

the Serrano an evidence of bad faith. "The witchmen of our tribe were honest men; we wait till god talks."

The word for medicine, power, is *apaxáwit*. A shaman or anyone who is "different" is known also as *paxáwit*. The sacred feathers, thunder, anything sacred or mysterious is described by the same word. At the present time the concept is not consciously animistic; it is a term designating an impersonal, unlocalized potentiality of power.

It seems that, with the Serrano, the boys' toloache ceremony known as *tamonin*, (from *tama*, to teach), was not a tribal initiation into the status of manhood. Only the sons of chiefs and *pahas*, and "all boys who were different" went through the ceremony. Afterwards, not all boys who had had the drink would be smart enough to practice as shamans, but it was always a possibility. Some informants thought that it was at this time that the future shaman got his medicine; he saw it while under the influence of the drink. One would never know for certain, however, for no shaman ever told his medicine or the circumstances under which it came to him. The medicine would punish any such confidence.

The toloache ceremony has not been given for so many years that information is vague, but it seems not to have been a fixed annual ceremony. It was ordered by the chief of the group holding the ceremony, and superintended by the *paha*. The *paha* was always the person in charge. The shamans gathered to dance; but instruction of the boys and the administering of the drink was the concern of the *paha*. If the boys were overcome by the drug during the dance, the shamans supported them. There was no ground painting.

The dancing at the ceremony continued for three nights. The drink (*manitc*) was administered the first night. Immediately afterward the boys danced till most of them were overcome. There was singing and dancing the next day, in charge of the *paha* and *tcaka* (singer) while the boys were under the influence of the drug; and on the third day the boys were supposed to be able to run the ceremonial race. The one who came in first in this race was trained for the Eagle Dance. As this dance was very difficult, and made up of whirling motions, they could tell who could best perform it by his swiftness in the race.

After this ceremony, a man could practice as a shaman if he was "smart enough", which was interpreted as meaning if he had had a dream that gave him a good enough medicine. However, if a man really intended to be a shaman, it was necessary that he give a dance in the ceremonial house. If he should practice as shaman without this preliminary, he would die; something bad would happen. When he was ready, he would tell the *paha*; all the people would gather, and the prospective shaman would give an exhibition of his power. He might dance with a violent trembling of the whole body; he might fall rigid on the floor, and call out prophecies in a strange voice. Usually such demonstrations as this, however, came later in a shaman's career.

The duties of the shaman were always strongly differentiated from those of the *paha*. The latter were the custodians of the tribal rituals, and the supervisors of tribal observances; the former were the possessors of direct personal power which they used according to their individual initiative. The *paha*, as well as the chief, inherited his position from his father; the shaman was a person selected by tribal custom on account of some marks of psychic instability.

The chief function of the shaman was healing. It seems absurd to the Serrano that one should go to a shaman for the tribal myths; those were passed down through the *pahas*. On the other hand, none of the familiar differentiations of the healing processes seem to have been marked off by the Serrano; the same shaman cured by herbs, by sucking, by applying the bites of insects, and by seeking a vision, according to the circumstances. A stock means of curing also was by finding and restoring the lost soul.

Sucking was always preceded by singing, and sometimes by painting the face; herb-doctoring, not always. In the family of a chief or *paha*, a shaman would ordinarily give a dance culminating in a trance; or he would have a lost-soul ceremony.

There were many occasions that showed that someone's soul (*áhat*) had left the body: when a shooting star was seen, when eclipses occurred, or at any time when Takwitic, the low-flying meteor, was suspected. Only the medicine-man, however, could tell whose soul had been taken. If he did not hold a dance, and find the soul, and restore it, that person's death would follow

shortly. In this dance the shaman sought everywhere for the soul. He grabbed for it in every corner of the house, and at last caught it in his hand. Sometimes he showed it; then it was usually a little black thing.

The paraphernalia of the shaman were very simple. He used to have a scratching stick on a string around his neck. His sacred equipment in former times was a cane about three feet long which was covered with fur, and had feathers tied near the top. He showed his power with this stick; it figures frequently in the myths.

Another method of healing used by the shaman was a treatment that consisted in allowing spiders and insects to bite the patient. The black spider was the most important creature used for this purpose. The shaman would capture one of these and keep it in captivity for two or three days without food. He would then place it upon the skin of the patient. The pain is said to have been very great, lasting for three or four days, but the cure was sure. Ants were used in the same way, but were much less painful, and much less esteemed.

Bear Doctors. The last Serrano bear-doctor died many years ago, but there are many stories current about the last Cahuilla one, Juan de la Cruz Norte, who died only a couple of years ago. During his dances, he was able to transform himself visibly into a bear. No one should ever say anything bad about a bear, for bears always heard whatever was said, and would kill anyone who spoke disrespectfully.

MATERIAL CULTURE

Houses. The houses of the Serrano were rectangular, non-communal houses made of tule. Forked posts were set in the ground on which a cross beam was laid, and the roof was sloped from this to the wall-beams, some four feet from the ground. Roof and slides were covered with bundles of tule. Such houses were rain-proof.

Tule grew somewhere in each of the canyons along the range of the Serrano. In the Marki canyon, where the reservation now is, it had to be packed down four miles from the *ciénega* up the

stream. It grew on the lower stretches of Big and Little Marongo Creeks.

The ceremonial house was built in the same way, but was larger. The largest now on the Marongo Reservation is about forty feet long by fifteen wide, but the old ones were larger.

Besides these there was also the sweat-house, *üt*; though most Serrano today know it by the Cahuilla name of *huyetcat*. The old sweat house on the Morongo Reservation has already been described.³ This has now been blocked up, since the death two years ago of the old Serrano man who last used it. It was slightly excavated, and was covered with earth.

Pottery. Pottery was made by all the Serrano of the San Geronio Pass; steatite was apparently not in use. The red clay was obtained from the mountains, dried, sifted to remove any coarse particles; then wet and left to ripen for twenty-four hours. It was then rolled out in small ropes and coiled in the shape of the vessel. This was patted between a round stone held on the inside and a paddle held on the outside of the vessel. It was fired usually at a fire of hard wood twigs, though some women used dung. The pot was not kept uniformly from the fire, so that it was usually irregularly spotted with black in the firing.

A number of informants, including two former pottery makers, disclaimed all knowledge of a color slip in the manufacture of pottery. One woman, however, said that she had been up in the mountains in her youth after a red earth which was sifted and moistened, and painted over the vessel, and burned darker red in the firing. This is probably a red ochre. No one knows of any Serrano pottery which was ornamented with black decoration.

Pots were used in cooking, and also very extensively as ollas to hold mesquite and piñon flour, etc. The pots filled with the dry flour were placed on ridges along the hills. At her death all of a woman's pots were broken.

Basketry. Even the native women do not claim to be able to distinguish the baskets of the various Mission tribes. Owing to

³ A. L. Kroeber, Cahuilla Ethnography, U. C. Publ. A. A. E., VIII, 64, 1908.

the very strong feeling among the Serrano in regard to the destruction of property at death, as contrasted, for instance, with the Cupeño, where it is absent entirely, there are very few old remaining Serrano baskets.

The materials have been described for the Cahuilla⁴, and are identical for the Serrano. The black dye, which they say comes from a species of elder, is known as *tcupiatium*. The prepared sumac fibres are left in this dye for a month. These dyed black strands are much more highly prized by the Serrano themselves than the various brown shades of the *Juncus* which are extensively used in baskets intended for sale.

Basket hoppers were woven for the stone mortars. One seen in the ceremonial house was about ten inches in diameter, and had two zigzag lines in black woven around it. It had been started on a hoop of warp about eight inches in diameter. A black gum had been used for attaching it to the stone mortar.

Granaries made of intertwined twigs and slender branches were used by the Serrano.⁵ A large tub-like basket was made after the same fashion, some three feet across and not quite so deep, for leaching acorns. This was well lined with sand, and the pounded acorn meal spread around the vessel. When the leaching water ran clear, the meal was separated from the sand, by letting it adhere to the palm of the hand.

Mortars and Metates. The Palm Springs Serrano used only the bed-rock mortar and the wooden one in the form of a deeply hollowed tree-trunk sunk in the earth the greater part of its length. The Mission Creek Serrano used both these types, and also the movable metate. The Serrano farther west in the Pass did not use bed-rock mortars at all, nor the wooden one, but depended on movable stone boulders, some of them very well shaped, and the mortars with basketry rims.

Clothing, Nets, and Other Objects. Clothing was made of netted fabrics, of bark cloth, of woven rabbit skins, and of buckskin.

⁴ A. L. Kroeber, *ibid.*, p. 41.

⁵ A. L. Kroeber, *ibid.*, p. 42.

The material used in all knotted work was *wiwut*, the Cahuilla *wish*. It was soaked, made into a small lump, and rolled into twine on the bare thigh. It was this that was used for the carrying net which has already been described. Women's skirts were made of the same materials and the same stitch, but very much more closely knotted. The bands of the sacred feathers were also on a similar foundation, the quills being tied in as the work proceeded. The feathers were arranged to lie downward.

Wiwut formed also the woof of the highly valued rabbit-skin blankets. Rabbit skins were dried, and were used in the stringy form they assumed in drying. They were fastened on a frame, and the *wiwut* was woven in and out as woof with the fingers. These blankets were the chief bedding in cold weather; they were used also thrown over the shoulders, and as babies' quilts.

Bark was also cut from the mesquite and other bushes, and pounded and pulled till it became suitable for use in making women's skirts.

Clothing was also made of deer skins. Every part of this work, from the preparation of the skin to the sewing and painting of the garments was men's work. After the all-night ceremony which always followed the bringing in of a deer, and during which the carcass was left whole, the animal was cut up, some of the meat used for a feast, and the remainder taken by the hunter. The head was always saved in order not to spoil the hunter's luck, but they appear not to have been used except as disguises in stalking deer. The skin was dressed with the brains of the animal and they used breast bones of horses or cows as scrapers. When the skin was ready, and very pale colored, the men made it up into garments. One skin was used for the front, and one for the back. They cut fringes at the neck and around the bottom and the garment hung down part way over the arms. Red ochre was used to paint designs on it.

Some such clothing had undoubtedly been buried in former times, but any garment not so used as clothing of the dead would have been burned at their death.

Buckskin shoes were also made. They were as high as six inches above the ankle, and were cut with a separate buckskin sole, and laced up the front of the foot.

Sandals were made also of fibre of the century plant. Pads of the fibre were fashioned in the shape of the foot⁶ and strings were so arranged that the foot could be slipped in. They were worn whenever a protection from thorns was desired.

The cactus fibre was rolled in large soft ropes, and made into mats. The Cupeño appear to have used similar mats for sleeping purposes, and about the house; but the Serrano know of only one use for this mat, and kept the sacred feathers wrapped in it between the times of the annual ceremonies.

Bows and arrows were about three feet long. Bows were made of a certain kind of scrub oak called *i-patc*. Arrows were either sharpened wood, or they were made of cane with stone arrow-heads attached with fibre. The stone arrow-straightener was used in fashioning these latter.

A crooked throwing stick was used in hunting small game such as rabbits. This was about three feet long.

A bull-roarer was used in the annual ceremonies. It was forbidden for anyone to look in the direction of the sound.

Money. The old form of currency was a string of shell beads, rather roughly shaped, of thin curved shells. They have been used in large quantities in burial, in the last hundred years at any rate. Such strings are now given to the tribes participating in the annual ceremony, and the old unit of measurement is still used by the *paha* in measuring these beads. This unit is about a yard and a third, and is measured by holding the string between the first two fingers held erect; bringing it over the little finger and down the outer side of the hand; around the wrist, and back up to the starting point, where it is caught again between the same fingers. It is then brought straight down under the hypothenar eminence (base of hand, under little finger); up the back of the hand to the starting point again, and down again across the palm to a point half way between the wrist and elbow. The traditional value assigned to this length as thus measured was twenty-five cents.

⁶ A. L. Kroeber, *ibid*, p. 60.

Smoking. The tobacco used in smoking was *wahei api'va*, "coyote's tobacco." This plant was not planted or cultivated. It was used not only ceremonially but about the house. There were no special ceremonial pipes, but each man brought his own, which was either of reed or pottery, and straight in either case. In ceremonial smoking the tobacco was passed, but not the pipe.

Sweat-bathing. Sweat-bathing among the Serrano was for purposes of health, and at the present time at any rate any ceremonial significance has passed out of mind. The proper time of day for the practice was in the late afternoon, and anyone could go to the sweat-house who had the wood for the fire. Even the women could use the sweat house, though their more usual recourse was to the heated sand-pit.

The sweat-house itself was excavated to a depth of about a foot and a half, and the house, about twelve by eight feet in size, was formed of logs covered thoroughly with earth. Heat was furnished by a fire built just inside the entrance. There was no smoke-hole. After sweating, they scraped themselves dry with bark or a scraper, and went to the wash near-by where, except in a very dry season, water was dammed up in sufficient quantity for a plunge.

It is said that no prayer or shamanistic supervision formed a part of this sweat-bathing.

Paint. For ceremonial face-painting, red, black, and white were commonly used. The black was charcoal, and the white was a chalk-like clay. By far the most important paint for all purposes was red ochre, found in the mountains. They called this *uxtc*. It is mentioned in the creation legend as originating from the earth soaked with the blood of Kukitatc when Coyote ate his heart. This earth was at Wanape (meaning the river) in the Bear Lake region.

Red ochre was gathered and dried, and sifted to remove the coarse particles; then wet, and applied as paint. Besides its use in face paintings, it was the material used in the drawing on rocks which were formerly made by both boys and girls at adolescence.

These drawings were of human figures, often a woman accompanied by twins.

Red ochre was used also to decorate buckskin garments. Everything associated with the use of deer skin was the work of men, even the sewing and painting.

It would seem that red ochre was not ordinarily applied to pottery. It was however sometimes used before firing, and was the only kind of decoration used by the Serrano, according to informants today.

Sacred Feathers. The most valuable tribal possessions of the Serrano were the sacred feathers (*vumtc*). These were bands made on a tied foundation of *wiwüt* (given as Indian hemp) which was rolled between the hand and the bare thigh to prepare it for use. Into this, eagle feathers and soft tan feathers from the woodpecker were tied by the quills, the feathers lying downward. A narrow band of these was tied around the head of the dancer, and at the sides upright bunches of eagle feathers were added. A like bunch was sometimes held in the hand. A wider strip was tied around the waist and formed a sort of apron.

Food. On the desert mesquite was the standard vegetable food, and was highly valued everywhere in the Serrano territory. It was prepared preferably in a deep wooden mortar sunk in the earth. It was first pounded coarsely, then winnowed, then pounded to fine meal. It was stored in ollas on the ridges of the foothills; sometimes also in granaries of willow twigs. To prepare the meal for eating, it was simply mixed with water, and eaten without cooking.

Acorns grew in all the canyons, and were gathered by the women, and pulverized either in movable or in bed-rock mortars according to the custom of the district, and leached in large tub-like baskets of willow twigs lined with sand. Hot water was poured through until it ran clear.

Piñon nuts were important in the diet of all these groups. A trip was made over into the Bear Valley region every fall for these nuts. No group could go without its chief and the Maringa-Mühiatnim-Atü'aviatum group went together, under the leader-

ship of the Maringa chief. The two first groups went first to Kupatcam, The Pipes, where the Atü'aviatum lived. From the time they left this place, the party began to *witc-at*. This term refers to communal, that is, ceremonial, eating. When any ceremony whatever was to be undertaken, the requisition for the feast upon the proper heads of families was the *witc-at*. So on this trip all provisions were turned into a common fund by the heads of the families, and distributed by the chief through the *paha*. The first piñon nuts were given to the chief by every family, and these were used for his *witc-at* at the annual feast which always followed this trip very shortly.

The cones were thrown into the embers of a fire and raked out when the nuts had loosened. According to one informant they were also roasted under cover. They were then struck against something to loosen the nuts, and these were ground into flour in mortars, shells and all. There was no winnowing.

Many deer were taken during this trip. All night ceremonies were held over each one, and the work of cutting the meat and dressing the skin was the work of the men. What meat was left over was dried in slabs, and taken home. To prepare it for eating it was cooked partially, then pounded, and finished off by roasting. The bones were pounded in the mortars while fresh, and eaten in a sort of paste.

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THE SHAMAN OF NIUE

By E. M. LOEB

NIUE, or Savage Island, is situated in latitude $19^{\circ} 10'$ south, longitude $190^{\circ} 17'$ west. The nearest land is Vavau, of the Tonga group, distant nearly west 240 miles. The island was discovered by Captain Cook in 1774, and Christianized by Paulo, a native of Samoa, in 1849. Sir Basil Home Thomson brought the island under the British Protectorate in 1900. In 1901 Mr. Percy Smith was sent as Government Resident for the purpose of annexing the island to New Zealand. During the four months which Mr. Smith spent on the island he found the opportunity to study the native language and culture, and the results of his investigations have been published in the *Journal of the Polynesian Society*.

The author of this paper spent seven months on Niue, commencing August, 1923, for the purpose of making an anthropological survey of the Niueans for the Bernice Pauahi Bishop Museum of Honolulu.

The original culture of Niue differed in certain vital respects from the culture of other islands in Polynesia with which I am acquainted. The people lived virtually under a democracy, and were unacquainted with any system of divine chiefs, caste division of labor, or hereditary priesthood. They were also not given to the memorizing of lengthy genealogies. The absence of these factors in the culture of Niue may be accounted for in either of two ways. (1) The people may be the descendants of immigrants from Samoa or Tonga who embarked upon their voyage without the guidance of priests or highborn leaders. (2) The people of Niue may have left their immediate homeland before the development of aristocracy and theocracy.

If we assume for the present that the second reason be the true one, the nature of the "priests" of Niue becomes an interesting topic of study, for the "priesthood" of Niue will then resemble in form the "priesthood" of the ancient home island of the

Niuean people, or, in other words, it will be an archaic survival perpetuated by comparative isolation.

The so-called "priests" of Niue are termed *taula-atua*, or anchor of the gods. Mr. Gifford informs me that the inspirational priests of Tonga are called *taula-otua*, while Stair writes as follows concerning the priests of Old Samoa: "The Taula-aitu, 'anchors of the spirits', from *taula*, an anchor, and *aitu*, spirit, formed the priesthood, and possessed great influence over the minds of the people. They may be classed under four heads; viz.: Prophets or Sorcerers, Family Priests, Priests of the War Gods, and Keepers of the War Gods."¹ The priests who exorcised evil spirits in the Marquesas Islands were called *tau'a hiko etua*, or priests who extracted gods. Thus the nomenclature is widespread in the Pacific.

The function of the *taula-atua* of Niue differs greatly, however, from the functions of the ordinary priesthood of Polynesia. There were no classes of the Niuean *taula-atua*, but every individual was capable of performing all of the duties incumbent upon his profession; those of bewitching, curing, prophesying, and cursing the enemy. Due to the nature of these functions, I believe that it is best not to refer to the Niuean *taula-atua* as a priest, but rather as a shaman. I believe that the functions performed by this class of people in Niue can be best compared to the functions performed by the shaman of Siberia. The people of Niue themselves do not, and never have, thought of the *taula-atua* as a priest. The word used for priest in the Niuean translation of the Old Testament is *eke poa*, gift maker. The *taula-atua* of Niue never made gifts to the gods. The people made their own offerings in a manner similar to that of the Homeric Greeks.

It will be noticed that the Niue word for the shaman is *taula-atua*, anchor of the gods, and not *taula-aitu*, anchor of the spirits. In the olden days the priests of Niue were possessed by gods, (*tupua* or *atua*) and not by ghosts (*aitu*). Today they are possessed by ghosts, and not by the heathen gods. Perhaps this is one of the reasons why the *taula-atua* of today is looked down upon by

¹ J. B. Stair, *Old Samoa*, p. 70, London, 1897.

most of the natives as being a deceiver (*tangata-pikopiko*). The teachings of the missionaries, no doubt, also aid in bringing these impostors into discredit. When a native is sick, however, he will go to the *taula-atua* sooner than visit the government doctor. In spite of the general attitude of the people toward the present day *taula-atua*, those of the past are still regarded with a feeling of awe and respect.

Bewitching. The natives of Niue have always been fairly free from fears of being bewitched. I have heard of one man who never left any remnants about when he ate bananas or when he spat, but this man was regarded as eccentric. Thomson writes,² "A common form of witchcraft was to take up the soil on which an enemy had set his footprint and carry it to a sacred place (the *matafaitunga*?), where it was solemnly cursed in order that he might be afflicted with lameness."—"Nowadays no spell can be more fatal than to imprison one of the sacred *moko* lizards in a bottle and bury it at the foot of a cocoanut tree with an appropriate curse, to destroy any person who may drink of the water of the nuts. To ensure the working of this spell it was, of course, essential that the victim should come to know of his impending doom; a hint was enough to lay him on his bed from sheer fright."

I imagine that the *taula-atua* was usually employed for the purpose of bewitching a person. Nowadays it is a trifle difficult for the *taula-atua* to work merely by the power of mental suggestion, and hence they are wont to employ poisons imported from Tonga or Fiji.

Prophesying and Spell Casting. The infallibility of the *taula-atua* was considered to be due to the fact that he was one possessed by the gods. Hence the usual badge for office lay in the liability of the man or woman to be subject to epileptic fits. If the person were not epileptic he was at least a victim of temporary insanity. I believe that fakers were unknown to the profession in the olden days, nor have I heard of any artificial means employed by which delusions were induced. Necessarily the profession of *taula-atua* ran in families, these families being the ones afflicted with a high degree of mental instability. The profession of *taula-atua* did not

² Basil Thomson, *Savage Island*, p. 97, London, 1902.

necessarily go from father to son, but sometimes skipped a generation, depending on the inheritance of the mental ailment.

The *taula-atua* was the weather man of the olden days. There was formerly a *taula-atua* named Fakailikula. He said that he was the ruler of the rain and the sun. Then a drought came to the island and the people went to him and asked him to let the rain fall. So he said to the people: "You are to work and plant all your fruits, then I will let the rain down and permit the plants to grow". After this the *taula-atua* went and carried a big stone until he came to a chasm with water at the bottom. There he prayed and turned the stone *seven* times on his head, then he threw the stone down into the well. The water came gushing up and splashed the top. At this sign the *taula-atua* called out to the people that there would presently be a heavy rain. The people waited and waited for the rain, but there was no rain. Then the *taula-atua* told the people to go down to the sea and dive into the holes on the reef, and that would surely bring rain. So the people went down and dove into all the holes in the reef, but still no rain came, for the *taula-atua* had lied.

It must not be supposed that the *taula-atua* were always unsuccessful in their efforts to produce rain. There was once a drought on the island; then the following *taula-atua*, Tukumulia, Tapuakikula, and Manongiholahetoea, called out to the people to come and march along holding a staff and hoisting a tapa flag (*matini*). This was for the purpose of producing rain. After two nights had passed there was heavy rain and the land was flooded. Then these *taula-atua* were considered the best, because their gods were able to produce rain. These *taula-atua* all lived at Lakepa.

The business of being a *taula-atua* was somewhat risky, for some time after this Tukumulia and Manongiholahetoea lost their reputations. It seems that certain of the natives went off in a canoe in order to beg fish hooks and earrings from a sailing vessel seen in the distance. The boat was further off than the natives had expected, and the result was that the pursuing canoe never returned to Niue. While the relatives of the lost natives were waiting they consulted the two *taula-atua*. These men, after they had been properly inspired by their gods, informed

the families to prepare a feast of taro, for the canoe would return the next day. Unfortunately the canoe never returned.

The third *taula-atua* of Lakepa, Tapuakikula, was a woman. She had the same gods as Tukumulia. Tapuakikula wore earrings on her toes. When feasts were given with dances, she went out to dance, and when she danced the earrings on her toes rattled. This caused the gods Niuloa, Falahi, Upi, and other lesser gods to rejoice. This *taula-atua* had many men: one of them was a Tongan *taula-atua*. The gods of this woman took good care of the sick people, because these gods saw that she was a fine big woman and that she had many men. So the gods were kind to the people that came to this *taula-atua*.

When Tapuakikula's sons grew up they married her, because they saw that she was a beautiful woman with earrings on her toes, and that she danced every time a dance was given. So all of the people were proud of her, and they rejoiced greatly.

Curing. One cause of sickness in the old days was supposed to be the loss of a man's soul (*angaanga*). In this case the man would go to the *taula-atua* and beg for the return of his soul. The *taula-atua* would be properly paid, and he would then send his *tupua* (gods) to look for the soul. The *taula-atua* would usually claim that the sea snakes had abducted the soul. If the *taula-atua* were able to recover the soul the sick person survived. If the *taula-atua* was unsuccessful, the sick person was apt to die from fright.

When a *taula-atua* was performing a cure, he always went into a trance or fit, thus establishing communication with his gods. He would keep up an incessant whistling at the same time. I have received the following information concerning the methods of cure employed by Tukumulia of Lakepa.

Niuloa, Falahi, and Upi were the gods that he prayed to. If a man was crippled, Tukumulia chewed some bitter leaves, such as the leaf of the *fumamala* tree, the leaf of the *moota* tree, and other bitter leaves of the bush. After these were thoroughly chewed, the *taula-atua* blew them into the ears and nostrils of the patient. Then Tukumulia called out to Niuloa, Falahi, and Upi, while the people stayed behind to ask the *taula-atua* which

god would come, whether it would be Niuloa or Falahi or Upi. Then the *taula-atua* called out to Falahi to come and help him heal the person.

Some of the people lived, but others died. This was because the *taula-atua* only called upon one god to help him. (Evidently the *taula-atua* often called upon the wrong god!)

I find mention made of another *taula-atua* of the olden days. Her name was Faneheone, and she lived 'at Tuapa. When she went out to cure a man who was sick, she first wrapped up his body with herbs, and then she made a hat of some bitter herbs for his head. Finally she chewed some leaves and spat them out on the man who was sick, calling upon her gods.

Cursing the Enemy. The *taula-atua* was called upon by parties about to engage in warfare to prophesy the result of the conflict and to paralyze the enemy through the ceremony of *tungi maama*. This was a curse performed by the passing of spears through the smoke of a fire.

The Present-day Taula-atua. As I have said before, the people of Niue pretend to look down upon the present-day *taula-atua*. When I informed my native friends that I proposed paying a visit to a famous *taula-atua* of Liku, Titituli by name, I was urged not to go. I was told that the cures practiced nowadays are mostly all importations to the island from either Samoa, Tonga, or Fiji. I was also told that the beliefs of the present-day *taula-atua* are all *pikopiko* (false), and that they did not represent the opinions of the mass of the people.

Needless to say, I did not give up my proposed trip. However, the above information should be kept in mind when reading the accounts given of the present-day *taula-atua*. Any opinion that they express on the subject of *aitu* (ghosts) or about the future world, represent the beliefs of the class of *taula-atua* themselves, rather than the ideas of the people of Niue as a whole.

I found Titituli living in rather squalid surroundings a short distance from the center of the village. He was an elderly man, of age unknown. He was unkempt in appearance, and covered with sores from the yaws. He also suffered from elephantiasis, and his right leg was badly swollen. Finally, he was subject to

epileptic fits, and it was this fact which accounted for his official position in life. Titituli maintained his customary state of health until a couple of months after my visit, when while smoking in bed one night, he set it on fire. At present he limps around painfully, due to the fact that one of his sides is badly burned.

After the usual gifts of tobacco and canned meat were presented, I questioned the *taula-atua* concerning his ancestors. He informed me that his father was not a *taula-atua*, but that his grandfather, Munga-ulu, was one. The father was not subject to epileptic fits, but the grandfather was.

I was given the following information on the subject of the *aitu*, and the curing of people.

My informant is in the custom of communicating with his dead elder brothers, Fatamaka and Haimatatau. He actually sees them. When they come they are *fakamauli*, in black form. When the ghosts appear, the *taula-atua* usually loses consciousness, but at times he sees the ghosts without losing his senses.

The ghosts pay the *taula-atua* a visit when somebody is sick. They inform him as to whether the patient is likely or not to live, and whether he is worthwhile treating. If the patient is a hopeless case the ghosts tell this to the *taula-atua*; they also tell the *taula-atua* how to compound the medicines. If he makes a mistake, they come back and tell him. While compounding his medicines, Titituli recited the following charm:

"*Hoko hingoa fou tavalu ke tavalu kehe tuanaki noa, nofo fakaoti.*"
("My name is new shaking, shaking because you are coming, remain until the end.")

Titituli uses leaves in the making up of his medicines. He also uses the barks of various trees, as the *telie* tree, the *panopano* tree, the *kahame* tree, and the *ngahu* tree. The leaves and barks are well mixed and then wrapped in *lau-kaka*, the outside fibre of the cocoanut tree. This mixture is then distilled in water.

The *taula-atua* rubbed leaves on his hands before he went to a patient to administer massage. The Niue people were very fond of massage, and it was considered efficient for driving out of evil spirits. At other times the *taula-atua* made bad smells by the pounding of leaves, and he drove out the *aitu* in this

manner. Or else he placed one leaf on the patient's mouth, and another on the patient's nose, and thereby relieved the sufferer from the ghosts, since they were unable to bear the smell of the leaves. The ghosts came out of the sufferer in the form of human beings. I asked the *taula-atua* whether the ghosts ever took refuge in animals on being driven out of the patient, as, for example, in swine, as was the case according to the words of the New Testament; but the *taula-atua* denied that this has ever happened in Niue.

The *taula-atua* often beat and cut people in order to relieve them of their unpleasant spiritual parasites. Titituli denied using these forms of cures. The Niue people have always been fond of bleeding themselves with a shark's tooth in order to relieve headache, but this is usually a matter of home treatment, as is massage (*tukituki*).

On being questioned further concerning the nature of the *aitu*, Titituli gave the following information.

"Sometimes I can see the ghosts (*aitu*) sitting on the tops of graves. They often travel together in flocks. Only angry *aitu* attack people. They first attack people by entering into them on the shoulders, or ears, or the back of the neck, or the thigh. Ghosts whistle and call out to one another. They do not address ordinary beings, however.

"When people eat good food, and live in comfortable houses, the ghosts become angry. Then they enter into (*heke*) this kind of people and make them sick.

"When human beings die they linger around the earth. The relatives of the dead wait to catch the ghost and wash it clean so that it may become bright and visible to others in *po*. The names of the ghost islands are (1) Fonua Ngalo, the Missing Land, (2) Ha Tala Fale, and (3) Namu Efi. (I cannot translate the second name. The third is identical with the name of an ancient god, and means pleasant smell.) Spirits travel on top of the water, and thus go from one of these islands to the others. They travel on pieces of wood which are propelled by the tides. A small piece of wood will hold from 300 to 400 ghosts. Baby spirits go to Fonua Ngalo. They grow up there and come back to

take revenge upon their parents if they were murdered as infants."

Wishing to obtain further information concerning the modern *taula-atua* of Niue, I next consulted Hipa, the native chief of police. The administration had for a long time been combating the influence of the *taula-atua*, and I correctly inferred that Hipa would have records regarding the doctrines and practices of the modern practitioners of this occult art. The following texts refer to some of the *taula-atua* with whom Hipa has had dealings, either recently or in the past.

(1) The male *taula-atua* of Tuapa. It was his custom to prepare medicine from various countries; some of the medicines were taken from Tonga and some from Fiji. He gave his medicines to people to eat, if they were ghost-ridden as shown by their having pains in their chests. All of his ghosts were blind.

Suddenly the ghosts of Fiji and the ghosts of Tonga fought, and the ghosts of Tonga were defeated whilst those of Fiji were victorious. Therefore the medicine from Fiji was very powerful, and some of it most useful indeed.

(2) The male *taula-atua* of Lakepa, named Nukuhana. It was the custom of this man to pray to the ghosts to come. Then all the ghosts gathered together from the different islands. These ghosts had swollen legs, swollen arms, and swollen heads. They were no good. They only walked about and slept, but they did not find any people to attack. They were very lazy and they did not do very much work. Their medicines were useful to people, if the people were troubled with swollen legs, or swollen arms, or swollen heads.

(3) The male *taula-atua* of Liku. It was the custom of this *taula-atua* to go out when the cock crowed in the morning and visit his sick people. When he arrived at the home of his sick people he called out for his ghosts to come.

After a little time had passed the ghosts entered into the *taula-atua*. Then the *taula-atua* touched with his hands the sick man and recited his charm.

The custom of the ghosts of this *taula-atua* was to live beside the water, and it was their custom to ride on the waves when the ocean was rough and thus to come to shore (surf riding). Suddenly they would go and possess the waves, singing and laughing, and calling out, "Stay back if your body is weak." Then the *taula-atua* would answer, "Oh, my children, have you gone to a far country that I do not see you?"

(4) The female *taula-atua* of Ilakupu. She had many ghosts (*aitu*). One of her ghosts ruled over all the others. These were the words of the *taula-atua*: "My chief ghost is very large; he is a man, but his hair is very long. He has two eyes in the back of his head, and two in the front of his head. It is his custom to see all of the people; nothing is hidden from him. He can see a man when he comes in the front of him, and also when he approaches from the rear. It is his custom to marry all of the women of the island during the night. He rules over all of the other ghosts."

(5) The male *taula-atua* of Avatele. It was his custom to remain in his house until the moon came up in the evening. Then the ghosts possessed him, and they talked in various languages, shaking his arms about, and calling out in loud voices. This is the song that they sang: "The wind will blow from the horizon. The people will go along the main road, they go from one side to the other, they go from east to west. They do not go straight along the road lest they be struck by the *aitu*."

He said that it was the custom of the ghosts to ride on *pau* leaves, and pieces of wood, and all the rubbish that floats in the sea. These were the canoes of the ghosts.

(6) The story of the male *taula-atua* of Tamakautonga. This *taula-atua* had one ghost. He said that it was the custom of his ghost to swallow money when people gave it to him. The money remained in his stomach. But if his parents asked him for the money he was able to let it come out of his stomach. The name of this ghost was Fatupu. He was called Fatupu because he swallowed money and he was able to disgorge it again.

The ghosts spoke good words to the *taula-atua*, and this made his medicines beneficial. The ghost gave no medicines to the sick people unless he was approached with money. When the ghost talks, the sick man is healed. The ghost has only to speak words from his mouth (the mouth of the *taula-atua*), and the sick man is healed.

(7) The male *taula-atua* of Hikutavaki. It was the custom of this *taula-atua* to rave at the time that he was possessed by his ghosts. It was his custom to dance and sing at twelve o'clock in the daytime. If the people went to his house to get him, he would suddenly flee. Sometimes his ghosts entered into him, and he fled to the barren bush and lived there alone. Then he would call out to the ghosts, using English and Rarotongan words. He said that the ghosts of Rarotonga were there.

It was his custom when he found himself surrounded by a crowd of people to go up and stay in the high places, and whistle down. He had handkerchiefs in his hands, and he waved these down to the people. If the people came up to him he fled, and entering his house, he shut his door.

It is evident from an examination of these documents that all of the *taula-atua* were not in the same class. Thus number 6 was evidently in good mental health, and was merely suffering from what is sometimes called the "money consciousness". On the other hand *taula-atua* number 7 presents an evident case of intermittent insanity.

The *taula-atua* were never regarded with awe in Niue, excepting when they were in a fit, and thus showed clear signs of being possessed by gods, or, in modern times, by ghosts. Feeble-mindedness is treated with scorn in Niue today, but insanity still calls forth respect.

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NOTES FROM THE MAYA AREA

By FRANS BLOM

DURING the years 1921-23, I had the opportunity of making some trips in the states of Tabasco and Chiapas in Southern Mexico and on these trips saw several Maya sites of which the two described below have not previously been reported.

The first of these is situated close to the Finca Encanto on a branch of the upper Tulija River. The Tulija River comes from the mountains behind Palenque and runs towards the northwest. By Salto de Agua it leaves the mountain ranges, and finally joins the Macuspana River below the town of Macuspana in Tabasco. The Finca Encanto belongs to a German American mahogany and coffee concern; it is situated in the heart of huge tropical forests, two days' ride over very bad mountain trails to the south of the famous ruins of Palenque. Three days' ride further to the south over even worse trails one reaches the settlement of Bachajon, inhabited by Indians of the Maya-Tzeltal tribe. The products of the Finca Encanto are transported in native dugouts on the Tulija River, a five days journey to Salto de Agua.

Arriving at the excellent houses of the Finca my attention was at once attracted by an oblong stone tablet lying in the pavement of a path leading up to the main house. And as I entered the porch that runs around the house, I saw another tablet inserted in one of the walls. These two tablets were covered with incised designs representing human figures of distinct Maya character.

The tablet (Figure 1) inserted in the wall of the house is the larger of the two. It measures 1.10 meters high by 80 centimeters broad, it is of a fine textured white limestone and the two figures represented on the surface are incised in outline. On the right side a walking person is represented; his face seems to be covered by a mask and on his head he wears an elaborate head-dress. He is walking towards a standing person and is carrying some kind of ceremonial bar under his left arm. In his right hand he is holding

a long stick. One end of the ceremonial bar is ornamented with a conventionalized serpent's head. He appears to be walking on an ornamented terrace that reminds one of the facades of the New Empire Temples. This figure covers about two thirds of the tablet.

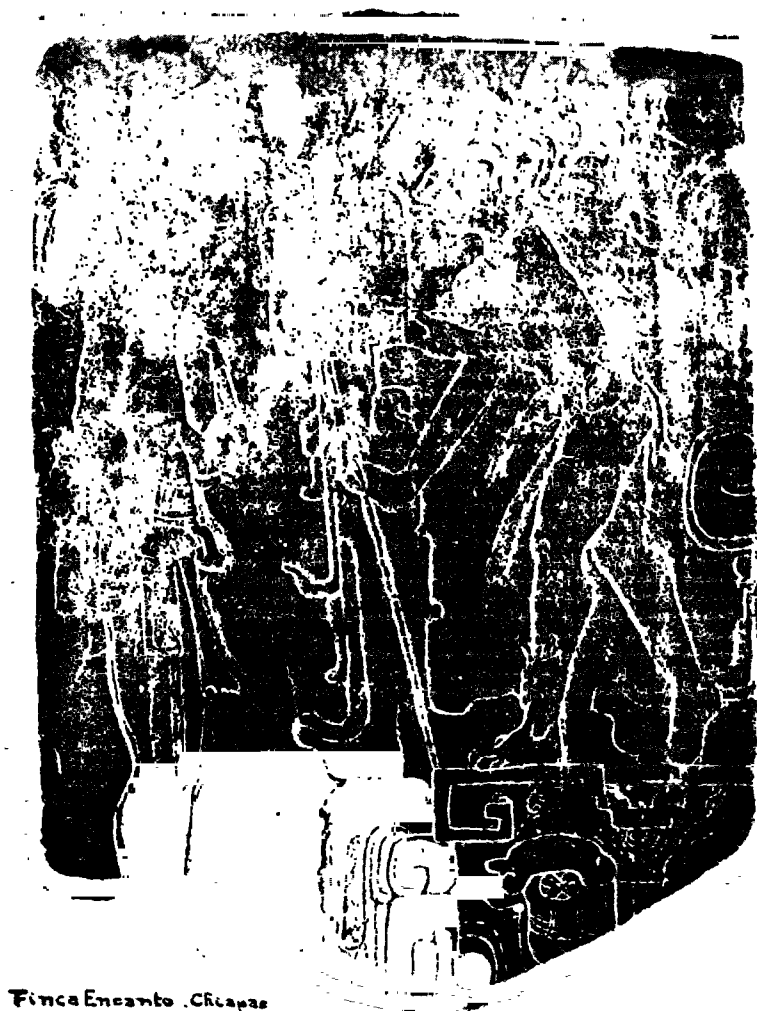


FIG. 1. Larger incised tablet at Finca Encanto, Chiapas, Mexico

On the left side of the tablet a standing priestly figure is seen. This figure resembles the priests standing on either side of the famous Palenque tablets. This priest wears a head-dress wherein a "Serpent-bird" is recognized. Around his neck he wears a necklace with a shell gorget. The upper part of his body is nude and around his waist he wears a belt with hanging fringes. At the back a mask is attached to this belt. Under the nose a small cavity was noticed containing some resinous substance; probably a nose plug of some other kind of stone was formerly attached here.



FIG. 2. Smaller incised tablet at Finca Encanto, Chiapas.

The smaller tablet (Figure 2) is 83 centimeters high by 50 centimeters broad. The figure represents a standing priest incised in the surface of the stone in left profile. The head-dress is

similar to that of the standing figure in the larger tablet. It is interesting to note the way in which the figure holds his hands, pointing with the left hand downwards. As on the large tablet this figure likewise has a cavity under the nose, filled with resinous substance. In front of the figure is a large ornamental scroll and some circles filled with cross hatching. As this tablet for a long time had been exposed to the tropical rains and to the wear of the shoes of the people walking over it, the ornament is somewhat effaced.

In style these tablets resemble the low-relief of Palenque and in technique they are similar to the tablet found by Maler at Xupa and published in the *Memoirs of the Peabody Museum*, Vol. II, No. 1, p. 21, Fig. 4.

A visit to the ruins of Xupa in January, 1923, revealed that this site is of minor importance and has been considerably overestimated by Mr. Maler. Though a careful search was made, the tablet reproduced by him was not found; later I was informed that it had been removed to a plantation on the lower Chacamas River, from which it has now disappeared.

The manager of the Finca Encanto, Mr. Linke Timbler, kindly provided me with a guide to show me the place from which the tablets had been brought. From the Finca, we rode to the northeast, and after crossing the Encanto River, we reached a gradually rising slope. Climbing this slope, at a distance of five kilometers from the Finca, we reached several walls and embankments arranged around a plaza. On the top of the embankments are several mounds. The plaza is surrounded on three sides by these embankments and mounds, to the west, north and east. On the southern side are no embankments but the downward slope of the hill has been terraced and indications of stairways were found. The northern side consists of a hillside artificially terraced and with two mounds facing the plaza.

Figure 3 shows a sketch plan of the group. The retention walls of the embankments are built of limestone flakes and in no place were signs of mortar found. (See Figure 4.) Likewise no signs of buildings were found and I therefore believe that the tablets were set up in temples built of perishable material as thatched huts.

The larger tablet was found by an excavation in the middle mound shown on the left side in Fig. 3, at a depth of one meter, and the smaller tablet where the trail crosses the fifth contour on the right side of the plan.

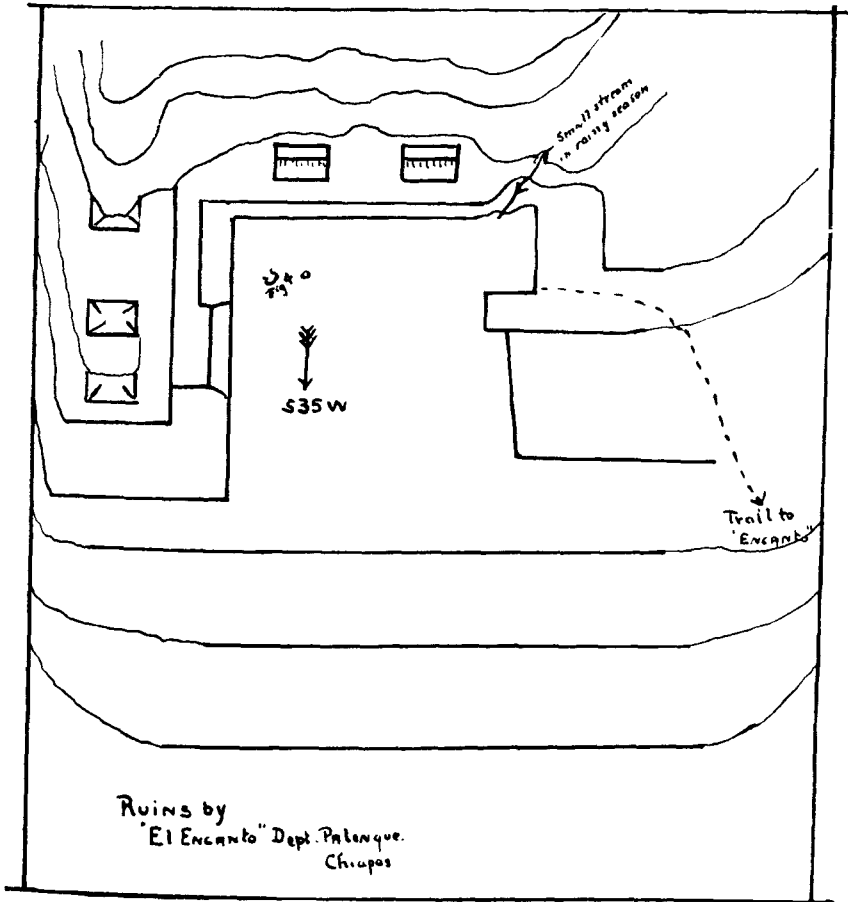


FIG. 3. Sketch plan of ruins five kilometers northeast of Finca Encanto, Chiapas.

The same gentleman advised me that he, a few days before my arrival, received a report from some Indians of ruins similar to those described above at a distance of two days' voyage into the mountains close to a small lagoon from which the Encanto River arises. He also told me of a mound lying close to the Finca

in a field, and that pottery had been found in the sides of this mound.

Another trip brought me to a small Indian settlement at a distance of 14 kilometers to the southwest of the town of Macuspana. This settlement is called Tortuguero.



FIG. 4. Retention walls of ruins five kilometers northeast of Finca Encanto, Chiapas.

In the first volume, numbers 8 - 12 of *Ethnos*, an anthropological publication under the direction of Dr. M. Gamio in Mexico City, General J. D. Ramirez Garrido publishes a rather fantastic article on the ruins of "El Tortuguero" calling this "El verdadero Tepetitan".

General Garrido attempts to prove that these ruins located close to Tortuguero are remnants of the town Tepetitan, through which Cortez passed on his marvelous expedition from Tenoch-

titlan to Honduras in 1524. It is not necessary to go into details as to the correctness of General Garrido's somewhat fanciful statements. I only wish to draw attention to the fact that he is the first to mention these ruins and to give a short description of them. He also gives a rough plan and drawings of two figures. The following is a summary of the structures found by him:

Nine mounds or pyramids are referred to as well as two figures carved in stone. These are the figures reproduced in drawing and called man and woman. Furthermore, the General speaks of one circular stone table, as well as one large stone table with a circular perforation in one of its corners. Strangely enough he does not mention with one word the most important monument at this site, a stela with inscription.

In May 1922, I spent some hours at Tortuguero and later published a short note on the stela which I discovered there in Volume I, No. 1, Second Epoch of *Ethnos*.

As the inscription on this stela has now been partly deciphered by Dr. S. G. Morley and it appears that the ruins at Tortuguero represent the western extremity of *dated* Maya monuments, some more details regarding this site will be given in the following paragraphs.

From the lowlands of Tabasco a limestone mountain rises gradually from the northwest towards the southeast, ending abruptly in a high vertical wall. This mountain is a forerunner of the Chiapas mountains and at the foot of its southeastern end, the small settlement called Tortuguero is situated. A trail, the highway between Macuspana and Teapa, passes through Tortuguero, and between this trail and the vertical wall of the mountain the ruins are located. Arriving at the huts of Tortuguero May 17, 1922, in the afternoon, an old Indian, by name, Sabino Lopez, told me of ruined temples and mounds close to his house, and the following morning I set out to investigate. Through some cornfields, we reached the foot of the mountain. To the right and left of our path, I saw artificial terraces. Here and there I stopped to pick up bits of broken pottery, heads of small figures, and fragments of ornaments all made of burnt clay. In some places, I

practically walked on a carpet of these remains of an ancient, densely populated settlement.

Entering the high forest that surrounds the Cerro de Tortuguero, we soon reached several mounds built of loose limestone blocks, in the form of truncated pyramids. Between these mounds were plazas and artificial terraces. On one of these plazas old Don Sabino showed me some figures carved in limestone. One of these represents a human being, somewhat crudely carved, wearing a loincloth ornamented in the style of the Maya. Head and feet are missing. The other figure represents the head and part of the body of a snake, not, as General Garrido says, a woman. What he takes for hieroglyphs are the scales on the belly of the snake.

The largest mound in the group lies to the north of this plaza. It rises in terraces and on its southern side is a niche in which lies a circular stone table. Further up and on the northeastern corner of the mound is a large square stone tablet with a circular perforation of ten centimeters in diameter in one corner. Otherwise, I did not find any sculptured stones on this mound, but on its top I noticed walls built of small limestone slabs held together by mortar, probably the remnants of a building.

As my time was limited, I did not search this mound very carefully but continued to follow Don Sabino in order to see the marvelous stone whereupon was to be found carved a "tigrehombre", tiger man, he had described to me the previous night.

At a distance of about two hundred meters to the south of the principal pyramid we found a large monolith, a stela. On the side facing up eight blocks of hieroglyphs and under these a crude representation of an animal with a human head are carved. Though at the time unfamiliar with the intricacies of Maya hieroglyphs, I at once proceeded to draw the inscription on the stone. The results of this labor are shown in the accompanying Figure 5. In Figure 6, the entire stela is represented.

Later I sent the drawing to Dr. S. G. Morley and in his letters dated September 30 and November 29, 1922, he gives the following deciphering. I quote the last of these letters.

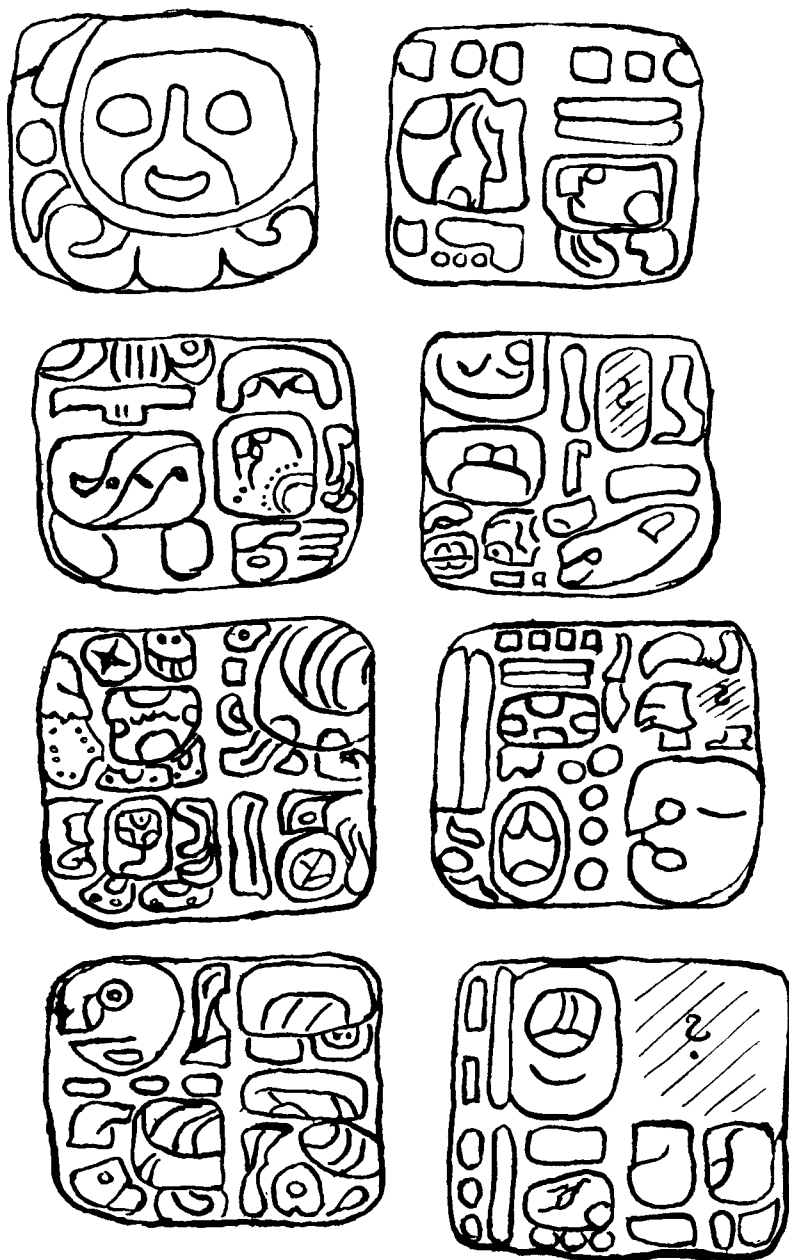


FIG. 5. Inscription on upper face of stela at Cerro Macuspana, Tortuguera, Chiapas.

Maya Monument.

Cerro Macuspana
(Tortuguero) Tab.

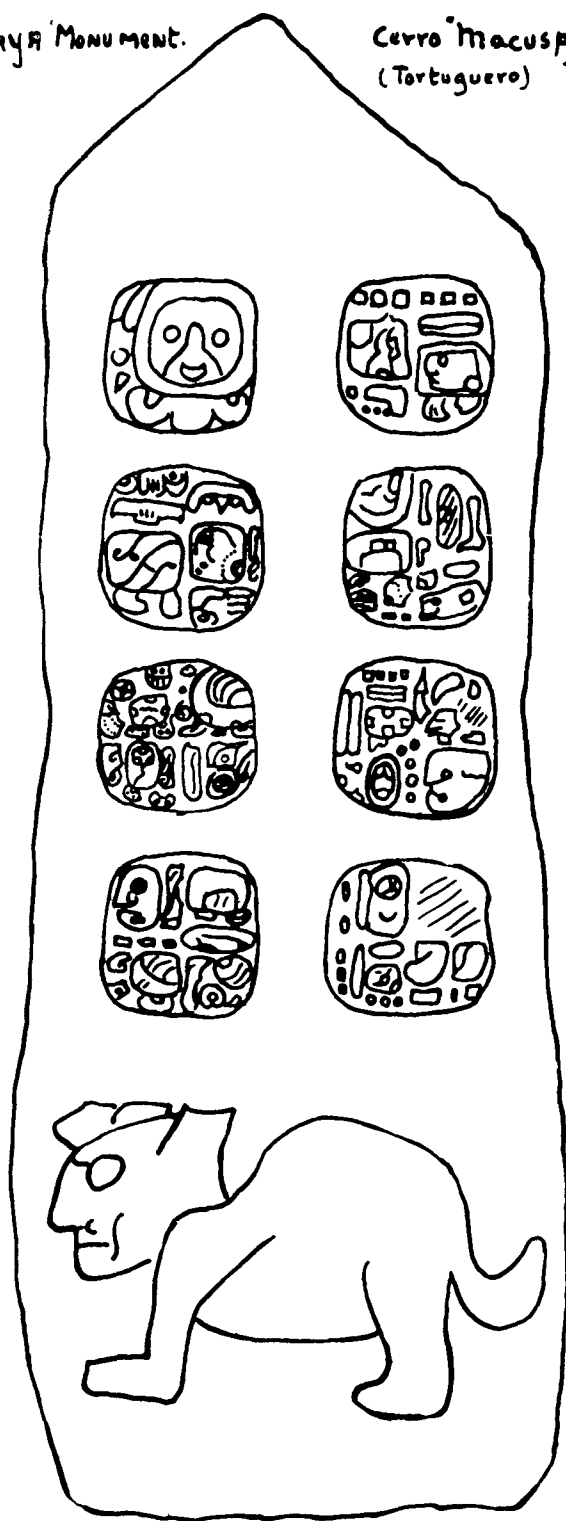


FIG. 6. Entire upper face of stela at Cerro Macuspana, Tortuguero, Chiapas.

"The date I read as: (9.10.13.0.0.) 1 Ahau 3 Kankin. The part in brackets not being actually recorded, but implied in the Tun 13, i.e. the second half of the second glyph.

"I think the Initial Series 9.10.13.0.0., 1 Ahau 3 Kankin is perfectly safe here since not for many thousands of years both before as well as after 9.10.13.0.0. could another Tun end on a day 1 Ahau 3 Kankin, and from your drawing I am satisfied that this is the date recorded in the first two glyphs."

Among the objects found on the ground was a large green stone ear plug and a huge quantity of figurines of clay, all typically Maya. Unfortunately, I was not able to photograph the stela as I had run out of film, but it is my hope that I will soon be able to return to Tortuguero in order to make a thorough study of these ruins, as well as to search for several buildings reported in that locality.

I wish to express my thanks to Dr. Gamio for permission to republish Figure 6 from the *Ethnos*.

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BOOK REVIEWS

AMERICA

Unter Feuerland-Indianern; eine Forschungsreise zu den südlichsten Bewohnern der Erde mit M. Gusinde. WILHELM KOPPERS.
Stuttgart: Strecker u. Schröder, 1924. 243 pp., 74 ills., 1 map.

In 1922 Dr. Koppers joined Father M. Gusinde in a several months' expedition to the Yagan of Tierra del Fuego, who had dwindled down to a bare fourscore of men, women, and children. Although the present volume is merely a preliminary popular account, it contains data of the utmost value to all ethnologists. Father Gusinde had paved the way on two previous trips, and the book is enriched by supplementary material gathered by him during a fourth sojourn among the Fuegians, subsequent to Father Koppers' return to Vienna. It is of course impossible to give an adequate notion here of the contents of this report, accordingly I will content myself with pointing out certain matters of special interest to Americanists.

The Yagan have two impressive ceremonial complexes,—an initiation festival open to both sexes and a men's tribal society using masks to terrorize the women. The former plays a far greater part in the minds of the people, and the author considers it an indigenous institution only modified in detail by contact with the Alakaluf (p. 77). On the other hand, the men's organization seems to have been borrowed from the Ona and figures in merely attenuated form: thus, while the Ona killed a member if he divulged the secrets of the fraternity, such rigor does not seem to have been exercised by the Yagan even in palmier days (pp. 103, 113, 129). A detail of the utmost importance is the combination of two features with the general initiation: the novice's obligatory sucking of water through a hollow bone tube, and the use of a special scratching-stick (pp. 54, 89). The association of both with rites of adolescence is of course purely arbitrary, and its occurrence in the extreme tip of South America links this marginal area with so remote a portion of the New World as British Columbia. Other phenomena of presumably great antiquity but not of specifically American character include the taboo on names of the dead and the practice of laceration in mourning (p. 161 f.). The admission of women into the secret fraternity if they

happen to stumble into a meeting (p. 110) is likewise reminiscent of certain North American customs (Pueblo Indians), but is probably intelligible on general psychological grounds: since the Yagan recoiled from killing the intruders, the natural alternative was adoption coupled with a pledge of silence.

The medical theory of disease as the consequence of intrusive pebbles (p. 175) that must be extracted by the physician has a distribution suggesting great age not only in America but in the world at large. However, Dr. Koppers gives interesting evidence of an ancillary view that in North America is largely restricted to the Eskimo and the Northwest, so as to indicate a Siberian origin: this is the notion that illness is caused by the loss of the soul. Thus, an old Yagan believed that an enemy had conjured away his granddaughter's soul, while another interpreted Father Gusinde's stumbling and falling in the initiation lodge as a sign that his soul had fled and must be recalled (pp. 72, 83). A definite historical appraisal of this conceivably Asiatic trait will be possible only after a fuller collection of relevant South American data.

The material presented on the making of a shaman (pp. 170-187) is very valuable. A special school was held for the training of those young people who felt the call or were impelled by their families, but those of a mature age who had experienced certain types of visionary experiences were permitted to become shamans without further ado, the office being open to both sexes. The account of revelations recalls some of the statements on the acquisition of Californian tutelaries.

Only one other feature can be discussed here,—the occurrence of two culture-heroes, of whom the younger systematically thwarts the elder's philanthropic designs as to fire-making, hunting, and death (pp. 202-208). The marplot motive is strikingly similar to that of Shoshoni and Maidu folklore.

Fathers Koppers and Gusinde have placed us all under great obligations, and we may reasonably expect much further enlightenment from their prospective monograph. It would be especially interesting to secure some statement as to the kinship nomenclature for the Yagan are apparently a sibless people and the comparison of their terminology with that of other sibless tribes, such as the Basin Shoshoneans, Chukchi, and Andamanese, would prove a fascinating task.

ROBERT H. LOWIE

La Población del Valle de Teotihuacán. MANUEL GAMIO. Mexico: Dirección de Antropología, Secretaría de Agricultura y Fomento; 1922, 3 vols., 1624 pp., 309 pls.

"It consists of three large volumes, in octavo form with a total of one thousand six hundred and twenty-four pages, two hundred and sixty-seven illustrations intercalated throughout the text, and three hundred and nine loose-leaf plates, divided into twenty trichromes, fourteen lithographs, four hundred and ninety-seven half-tone engravings, two hundred and thirty-eight line engravings, and three steel engravings, besides the forty-one decorative borders, twenty-five chapter headings and twenty-eight vignettes designed in penwork. The books are printed on the very best quality of paper." So runs the English announcement of this monumental work.

This report embodies the results of some five years of preparation, survey, investigation, and excavation on the part of the combined force of the Mexican Department of Anthropology, with the assistance of a corps of specialists from other governmental scientific departments, including biologists, geologists, meteorologists, and even artists and musicians. It is but the first of a series of such surveys which Dr. Gamio, the Director of Anthropology and editor, has planned and hopes to complete, each one containing the results of a complete survey of the anthropological, sociological, and economic aspects of a representative district of each of the varied cultural areas of Mexico.

In 1916, Dr. Gamio, in his inspiring work, *Forjando Patria*, "Forging a Fatherland," promulgated his thesis that only by realizing the essential Indian basis of the Mexican nation and by building upon this can Mexico achieve a national homogeneity and culture and consequently peace and prosperity. In pursuance of this ideal, upon taking charge of the Department of Anthropology in 1917, Dr. Gamio inaugurated the first of a series of representative surveys which are intended eventually to cover every one of the varied environmental and ethnological provinces of Mexico. Thus, the nation was divided into eleven regions of relative homogeneity, that one containing the Valley of Mexico and including the states of Mexico, Hidalgo, Puebla, and Tlaxcala being selected as the first point of attack. The Valley of Teotihuacan, on account of its archaeological importance and its complete historical records, was selected for intensive survey as representative of this province. How intensive, thorough, and com-

plete this survey has been can be appreciated by a perusal of the captions of the 37 chapters, written and signed by a competent scientific expert, of which the report is composed. During several successive revolutions and through several changes in government, the Department of Anthropology kept steadfastly at its task until the survey was brought to a successful conclusion.

The first volume is that of the greatest interest to archaeologists, consisting of three parts: Introduction, Synthesis, Conclusion and Remarks; Physico-Biological Survey; and the Pre-Hispanic Inhabitants. The second volume contains *The Colonial Inhabitants and The Inhabitants During the Nineteenth Century*, a volume of lesser interest to anthropologists, while the third volume refers to *The Contemporaneous Inhabitants* and contains considerable valuable material on somatology, ethnology, folklore, and linguistics.

Fortunately for English-speaking students, the first part, the Introduction, Synthesis, and Conclusion, has been translated into English by Dr. Gamio and is published separately as a work of 98 pages, illustrated by 66 selected plates. It gives a concise digest of the main results of the work and is excellently presented and printed, though marred by frequent errors of English orthography.

The three main volumes consisting of the Spanish original of the Synthesis and the detailed reports on which this is based are, of course, available only to readers of Spanish.

In the Synthesis is to be found the detailed report, profusely illustrated, on the excavation of the beautiful Temple of Quetzalcoatl which was discovered too late for this report to be included in its proper place in the chapter on the Archaeology of Teotihuacan. Here also Dr. Gamio expressed his views regarding the age of Teotihuacan and the relations between the Toltec and other Mexican cultures. He stated his belief that the Toltecs were the first builders in the Valley of Mexico, since no archaic architectonic remains were known, a theory which he has doubtless now abandoned in view of recent discoveries of pyramids of the Archaic Culture in the Valley. He, therefore, believed that the Toltec architectural features were derived from those of the ruder cultures of Northern Mexico, which viewpoint, without great exception or modification, will probably be accepted by most Americanists. He furthermore claims for the oldest edifices at Teotihuacan an age in excess of the Maya, and therefore tentatively ascribes to them an age of 2500 or 3000 years. His grounds for this belief are that no Maya influence is evident at Teotihuacan while

only slight Toltec influence is apparent at Maya sites, most of the formerly accepted Toltec influence being ascribed by the author to the Aztecs. In these views he takes issue with most of the other American students of Maya. He furthermore claims that the real Tula, the traditional Tollan, was Teotihuacan, not the present site known by that name.

The greater part of volume 1, 312 pages and 130 plates, is devoted to The Pre-Hispanic Population, consisting of eight chapters on Physical Type, Intellectual Manifestations, and Archaeology. The first topic is treated very cursively on account of lack of material discovered by or afforded to the Department and the conclusions practically merely repeat the published report of Hrdlička to the effect that the ancient inhabitants of Teotihuacan were brachycephalic and practised artificial deformation. The main conclusions of the chapter on Intellectual Manifestations of Culture are that the exact etymology of the name Teotihuacan is disputed, but undoubtedly refers to a sacred place and that the builders of the sacred city were the Toltecs, whose principal gods were the Sun and the Moon, the rain god Tlaloc, the fire god Huehuateotl, and the wind god Quetzalcoatl.

Of consummate interest to Americanists are the remaining chapters on archaeology, giving as they do the full details, amply illustrated by photographs, maps, plans, drawings, and reconstructions, of the recent excavations at Teotihuacan carried out by the department, combined and digested with the results of earlier investigations. No chapter is devoted to the Archaic horizon as such, a lamentable defect, but several phases of Toltec culture, stratigraphy and extension, the later Toltec or Acolhua and the Aztec horizons all receive separate treatment, as well as the relations between the several cultures.

The scientific conclusions may be succinctly condensed as follows: Three main epochs or periods of occupation are distinguished. In all periods the pyramid was the fundamental architectural concept. In practically every instance there was a levelling and filling-up of the structures of the first period and a superposition of structures of the second epoch without regard to the walls and lines of the original structure. The second was that of the maximum development, sculptured stones being much more common and painted frescos superior in this period. The third epoch was one of decadence, the painted wall frescos employing fewer colors. Pottery figurines of the

archaic type were found in the adobes composing the greater mass of the Pyramid of the Sun, affording additional evidence, if any more were required, of the primacy of this type. Of maximum interest is the report on the investigations of 1917, with their excavations in the great plaza known as the Citadel. The pyramids excavated during this work were carefully restored on the basis of their original lines to protect them from further deterioration, but this was done in such a way as to cause no confusion between original and restored surfaces. In the section of the chapter on Sculpture the statement is made that some of the material used in the construction of certain features was brought from other parts of Mexico at considerable distances.

Under the heading of Minor Arts the important question of pottery and figurine types is treated, and the relations between the Archaic and the Toltec horizons. Gamio distinguishes three main types, archaic, transition, and Teotihuacan or Toltec, in addition to the later Aztec. The Archaic culture, of this region at least, he identifies with the Otomi. Apparently the only grounds for this identification are traditional and historical records. The Toltecs he assumes, also without presenting convincing evidence, to have been later immigrants who occupied the Valley and absorbed the archaic culture, producing the transitional and early Toltec cultures. These appear to the reviewer to be merely plausible hypotheses which, in the absence of stratigraphical and comparative archaeological evidence, should not be accepted as more than possible or probable theories that will require further proof.

Many stratigraphical excavations were made in the vicinity of the ruins and careful studies made as demonstrated in the many tables, the main conclusions of this investigation being that there were two, or possibly three, periods of maximum occupation and other periods of relative abandonment, as shown by the fertility of certain strata and the sterility of others, and that the Aztec and Toltec cultures were coeval and coexistent for a long period, since objects of Aztec type are found, although always in very small quantities, in practically all strata except the very lowest. Both plain and decorated Toltec ware were found throughout the entire deposition, but the plain ware is always in excess. Most unfortunately, no account was taken of Archaic remains during the excavations, and consequently no conclusions are based on them. An attempt was made to determine the age of Teotihuacan, using as a criterion the

depth of the deposit around churches of known age in the region, but no satisfactory results were secured. As regards cultural extension, objects of Teotihuacan or Toltec type are reported from all the Valley of Mexico, Cholula, Tepeaca, and the states of Mexico, Puebla, Tlaxcala, Hidalgo, Vera Cruz, Oaxaca, and Guerrero.

In regard to the later historical periods of Teotihuacan, the conclusion is expressed that the city was completely abandoned at the time of the Nahua irruption, but that Toltec communities which maintained uninterrupted intercourse with the newcomers existed in many other places in the Valley. Thus vases with Toltec elements have been found amid the ruins of the great Aztec temple in Mexico City. The Toltec god Tlaloc was probably taken over by the invaders, but the cases of Huehueteotl and Quetzalcoatl are less certain. The Toltecs, abandoning Teotihuacan, are believed to have fused with the less cultured Otomi Chichimecs and Nahua Colhuas to form the Acolhua nation with their capital at Texcoco. On the arrival of the Aztecs, Teotihuacan was still a sacred site, though abandoned, and was in ruins at the time of the Spanish Conquest. These later conclusions are, like many preceding ones, based on traditional evidence, hence in the opinion of the reviewer, they should be considered merely tentative hypotheses until proven by actual investigation.

Volume 2, containing parts 3 on The Colonial Population, and 4 on The Population in the Nineteenth Century, is of slight interest to American anthropologists. It treats of economic, social, and religious life, colonial architecture, history, and similar topics.

Volume 3, the fifth part, on The Contemporary Population, is also primarily of interest to sociologists, though containing much of interest for students of Mexican archaeology and linguistics. Thus the bulk of the volume is occupied by a detailed report of the backward and pitiful economic, social, and religious phases of the life of the present population, typical Mexican peons, and the measures taken for the betterment of these conditions. It is a fascinating story of a great work, involving the installation of better methods of communication, roads and bridges, irrigation, the establishment of model farms and cultivation methods, model schools, houses for the peon, and ceramic and textile industries.

Of special interest to ethnologists are the chapters on physical type, ethnographic notes, folklore and dialect of Mexican. The present population of Teotihuacan is seen as a people in decadence.

They are of short stature, averaging 162 cm.,—the mixed-bloods being of greater height—mesocephalic or sub-brachycephalic with a mean cranial index of 80, mesorrhine and with an average pulse of 78. No attempt was made to compare these results with observations on other Mexican natives. The religious, social, and personal phases of the life of the present native are treated in detail as well as the economic life and industries. A large collection of folklore is given including tales, legends, proverbs, nicknames, religious dramas, superstitions and magical practises, and a collection of songs. In the stories animal tales predominate, the folklore being a mixture of aboriginal and European elements. The ubiquitous story of Pedro de Urdimal is claimed to be taken from a novel of the 17th century, a claim which will doubtless be disputed by most students of Spanish folklore. Naturally, the collection of folklore can be but a fraction of that locally extant. The study of the local Mexican (Nahua) language considers principally the local variations from the classical Mexican but appears to be carefully and scientifically done. A good vocabulary is appended.

The dominant note of the entire work is completeness and comprehensiveness. Every possible phase of the survey is treated with Teutonic thoroughness amounting in parts almost to excess. The uncritical floridity of verbiage so frequent in Latin scientific publications, which thus lose much of their convincing force, is noticeably absent, the many reports being written in a straightforward scientific style. The volumes are tributes to the admirable ability of the Mexican printer, engraver, artist, and binder, being of a quality not to be excelled anywhere, and forming a welcome contrast to the atrocious blotting-paper perpetrations so frequently emitted from Latin-America. The decorative chapter-headings lend a note of artistic charm to the general effect.

The Dirección de Antropología is to be congratulated on having completed with such thoroughness and excellence its initial survey. If it is able to carry out to a like result the remainder of its immense program, it will not only have achieved a work of vital importance for the future of Mexico and the Mexican peon, but one of inestimable value to students of American anthropology, but, so frank and honest has been the discussion of the influence of the Church and of the agrarian problem that one cannot but fear that it may have aroused the hostility of powerful influences which may before long be felt.

J. A. MASON

ASIA

Japanese Sword-Mounts, in the Collections of Field Museum HELEN C. GUNSAULUS, Assistant Curator of Japanese Ethnology. (Field Museum of Natural History, Publication 216, Anthropological Series, vol. XVI, 195 pp., 61 pl. 1923.)

In the art of working metals, the Japanese stand preeminent. Through their infinite patience and skill of hand and eye, such refractory materials as tough iron and steel, as well as the softer alloys, assume forms of great delicacy and beauty. This ability is exemplified in the highest degree in the sword-mounts and sword furniture produced in Japan from the fifteenth to the nineteenth centuries. The present publication describing the collection of the sword-mounts in the Field Museum is of value, therefore, to the art student.

It is of even greater value to the collector who wishes a book of reference of makers and signatures. The discussion of the sword-mounts is divided into a chronological account and a classification of makers by schools. The chronological sequence is important in a broad, historical sense. There is a development, both in the handling of the materials and in the refinement and elaboration of design, from the heavy iron and steel guards of the armorers and sword-smiths of the fifteenth century to the masterpieces of the workers in metals in the nineteenth century. The author skillfully indicates in the opening paragraph of each chapter the steps in this development, and points out the various historical and other factors that assisted. She also draws very close distinctions between the work of the different schools which arose from time to time in various parts of the country and which carried on their particular traditions for many generations. The famous Kaniye, for example, and his followers made use of hard iron which he sculptured in high relief and inlaid with gold and silver; the Hirata family achieved their designs by means of cutting away the iron in negative silhouette; while Joi and other of the Nava school chiselled an alloy of bronze with designs in imitation of the brush strokes of a painter (*katakiribori*). These and many other processes are explained and illustrated in the splendid reproductions in the plates. Preference for various subjects was shown by different masters and became characteristic of the work of their followers. Thus Jakushi, who had once been a painter, depicted landscapes on his sword-guards; Somin had a liking for tigers,

mystic lions, flowers, and the half-god, Hotei; while Soten delighted to depict scenes from Japanese history and folk-lore.

This suggests the more purely anthropological value of this publication. The author has gathered under the title of sword-guards a considerable group of Japanese myths and folk-lore. She has explained not only the maker, the material used, the process employed, but also the significance of the design (and in many cases, why this design was used) of every object illustrated in the back of the book (about 180 items are given in the plates). A few examples will suffice to show the wealth of this material and the thoroughness with which the author has done her work. Plate IV, Fig. 2, illustrates a sword guard of iron on which the design is inlaid in silver. This design is simply a group of three diaper patterns, a basket-weave diaper, a star-like diaper, and a third all-over pattern. The author explains the last pattern by saying that "a third all-over pattern is called *shippo tsunagi no wuchimi hanabishi*, that is to say, a *hanabishi* ("flower-diamond") within a connected *shippo*. The *shippo*, of Indian Buddhistic origin, are the seven precious things, generally enumerated as gold, silver, emerald, coral, agate, crystal, and pearl. These materials were used as inlay on many objects, and thus the name *shippo* has come to describe the cloisonné enamel in Japan. The "*hana-bishi* within a connected *shippo*" is one of the *takaramono* ("precious things") associated with the Seven Gods of Luck (*Shichifukujin*), who travel in the *takarabune* ("treasure-ship") loaded with these precious objects. The *hana* ("flower") used as the center of the design is the blossom of the water-caltrop (*Trapa incisa*, Japanese *hishi*), which bears a prism-shaped nut; hence anything in the shape of a prism is styled *hishigata* ("diamond shaped"). This diaper pattern appears in lacquer, brocade, pottery, and enamel, and was adopted as a crest by Matura, daimyo of Katsumoto. The fact that all design in Japanese art, even the simple diaper, has a deep significance to a people steeped in symbolism is here shown.

In another guard, the design of a broken fan is explained by the story of the fight at Dan-no-ura, where Japan's two powerful rival houses fought for supremacy. The incident of this fan is a favorite theme for Japanese artists and dramatists. Another guard has the unusual shape of a war-fan, and the author takes this occasion to devote a paragraph to the use made by the Japanese of the fan in battle. The custom of exorcising demons at a certain time of the year is depicted upon the handle of a *koruka*, the small knife that

accompanies the sword and is part of the sword furniture. The influence of the meditative Zen sect of Buddhism, the faith of most of the warrior class, is evidenced in the selection of the subject of the sword-guard on Plate VIII, Fig. 3. The solitary figure of the lonely traveller in the quiet landscape, more suggested than depicted on the iron guard, speaks of the peace of Zen.

These few examples taken at random serve to show the scope of this publication. The worth of the material is enhanced by a very good bibliography found in the footnotes and by the index which serves also as a glossary of the many Japanese terms used throughout. The free use of these terms may annoy some readers, but it is almost impossible to handle such a subject without recourse to the Japanese terminology. The historical introduction is short but comprehensive and is a distinct addition to the book. A few line drawings and diagrams of the various parts of the sword furniture would have been a further welcome addition, although the main piece, the guard itself, requires no further explanation than the text and the excellent plates.

SARA SCHENCK

SOME NEW PUBLICATIONS

Anderson, J. G. *Arkeologiska fynd i provinsen Kansu.* (Ymer: Tidskrift utgiven av Svenska Sällskapet för Antropologi och Geografi. Haft 1, pp. 24-35, 1924.)

Annandale, N. *The Faroes and Iceland.* London: Oxford University Press, 1924. crn. 8vo. 296 pp. 2 maps. 15s. net.

Baudouin, M. Marcel. *Utilisation d'une illusion d'optique d'ordre photographique pour l'étude des sculptures sur rochers préhistorique.* (Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences Tome 178. No. 23. Juin, 1924 pp. 1924-26.)

Christy, Cuthbert. *Big Game and Pygmies: Experiences of a Naturalist in Central African Forests in Quest of the Okapi.* London: MacMillan and Co., 1924. 3vo. 21s. net.

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Dundas, Hon. Charles. *Kilimanjaro and Its People.* London: H. F. and G. Witherly. 1924, 346 pp., maps and illus. 18s. net.

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ella senaria dei valori Antropometrica. (Rivista di Antropologia. v. xxv, 1923, pp. 63-85.)

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Lehmann, Walter and Doering, H. The Art of Old Peru. New York: E. Weyhe, 1924. 12 colors plates, 129 collotype plates, etc. Small folio. \$27.50.

Linton, Ralph. Material Culture of the Marquesas Islands. (Bernice P. Bishop Museum. Memoirs, v. 8, no. 5, 1923, 193, pp. 44 pl., 11 fig. \$3.00.)

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Malinowski, B. Psycho-analysis and Anthropology. (Psyche v. iv, no. 4, April 1924, pp. 293-332.)

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Richter, Gisela. The Craft of Athenian Pottery: An Investigation of the Technique of the Black-figured and Red-figured Athenian Vases. New Haven: Yale Univ. Press, 1924. London: Oxford Univ. Press, 1924. 25s. net.

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Shirokogoroff, S. M. *Ethnic Unit and Milieu*. (Royal Asiatic Society, North China Branch. Extra Volume IV. Shanghai: Kelly and Walsh, Ltd.)

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Siret, L. *La taille des trapézés tardenoisien*. (*Revue Anthropologique*, Nos. 3-4, Mars-Avril 1924, pp. 115-134.)

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Sullivan, Louis R. *Marquesan Somatology*. (Bernice P. Bishop Museum, Memoirs v. 9. no. 2. Bayard Dominick Expedition Publication No. 6, 1923, 109 pp., 6 pl. \$2.00.)

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The Life-work of Lord Avebury (Sir John Lubbock) 1834-1913. Comprising Essays by Sir Bernard Mallet, Sir Arthur Keith, A. Smith Woodward, J. Arthur Thomson, H. St. J. K. Donisthorpe, A. C. Seward, Sir Michael E. Sadler. Edited by his daughter, Mrs. Adrian Grant-Duff. Cr. 8vo. pp. viii-261. London: Watts and Co., 1924. 6s. net.

Thomson, J. Arthur. *What is Man?* London: Methven, Ltd. 1923. 6s. 6d.

Triana, Miquel. *La Civilización Chibcha*. Escuela Salesiana. 1921, 222 pp.

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Woodhouse, C. A. *The Inhabitants of the Waja District of Banchi Province, Nigeria. Pt. 1, Birth, Marriage, Death. Pt. 2, Crime and Punishment, Religion and Ceremonies*. (*Journal of the African Society*. v. xxiii, January, 1924, pp. 110-121; v. xxiii, April, 1924, pp. 194-207.)

DISCUSSION AND CORRESPONDENCE

WALLIS ON ARMENIAN KINSHIP TERMS

W. D. WALLIS, *American Anthropologist*, n. s., Volume 25, pages 583 and 584, discusses Armenian kinship-terms. We read footnote 1, page 583: "Perhaps the Sanskrit *duhitra* [sic !], 'daughter,' (from *du*, 'distant,' and *hit*, 'good'), indicates patrilocal practice, assuming that it connotes 'daughter-in-law' as well as 'daughter.' " But *duhitar-* (so) comes from **dhughater-*; whereby the supposed connection with *dū-* (so) falls to the ground; and Sanskrit *hita-* (so) comes from **dhato-*. Why Old Armenian *dustr*, "daughter" [*dvostor*, Wallis], etc. is not quoted, is a mystery to me. Wallis should consult the works of Brugmann, Hübschmann, Meillet, and others.

TRUMAN MICHELSON

THE LINGUISTIC CLASSIFICATION OF THE SHINNECOCK INDIANS

M. R. Harrington, in his recent paper "An Ancient Village Site of the Shinnecock Indians" [*Anthrop. Papers, Amer. Mus. Nat. Hist.*, Vol. XXII, part V], discusses the linguistic classification of the Shinnecock Indians, and notes (p. 283) that on the basis of a brief vocabulary it is safe to say that the Shinnecock language was more closely related to the Southern New England group of Algonquian languages than to the Lenapé (Delaware) or Abnaki group. He also credits Tooker with previously making this discovery, and states Dr. Speck in a personal letter had come to the same conclusion, and expresses this belief in a forth-coming publication. I call attention to the fact that years ago I assigned the Shinnecock language to the group under discussion: see the map at the end of the 28th Annual Report of the Bureau of American Ethnology. It may be added that there is no discussion of the point at issue in the text of the said Report, and that Tooker has a just claim to priority in the discovery of the proper classification of Shinnecock.

TRUMAN MICHELSON

REPORT ON ILLEGAL EXCAVATIONS IN SOUTHWESTERN RUINS

To the Executive Committee,
American Anthropological Association:

Late last fall the president of the Association, Dr. Walter Hough, appointed a committee to inquire into the subject of illegal excavations in ruins on the public domain. This committee consisted of Dr. A. V. Kidder, Mr. Earl H. Morris, and the undersigned. The committee made a progress report at the New York meeting of the Association last December; it was suggested at that time that certain additional information be sought and a final report be submitted to the Executive Committee for publication in the *American Anthropologist*. Although the results of our inquiries have not been satisfactorily answered in every instance it is deemed advisable to present the following summary.

On June 8, 1906, the so-called Antiquities Act (34 Stat., 225) was approved, making it a criminal offense for any person to "appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States without the permission of the secretary of the department having jurisdiction over the lands on which said antiquities are situated." The intent of the law is clear. Through lack of its enforcement, however, certain unfortunate conditions have arisen and future archeological research, especially in the southwestern United States, is threatened with a considerable handicap unless corrective measures are speedily introduced.

It is a fact well known to the members of this committee and to many other students of southwestern archeology that extensive collections of antiquities have been illegally obtained from pre-historic ruins on the public domain. Most of these ruins lie on Indian reservations in Arizona and New Mexico. Their exposed and unprotected condition is a constant invitation to the passerby to excavate for chance curios whenever the opportunity admits. Most residents of the Southwest regard it as their inalienable right to dig for "relics" in any ruin that tempts their enthusiasm. This spirit has rarely been contested. Except in the more inaccessible districts, it is now ex-

tremely difficult to find a prominent ruin that has not been measurably mutilated. It goes without saying that all data connected with objects of antiquity recovered during illegal operations is wholly ignored by the commercial or amateur collector. The objects themselves, perhaps temporarily cherished by the collector, are invariably soon broken and discarded or sold to any person offering a satisfactory price. In either case the specimens are lost to science and the unwritten story held within the ruins from which they came is rendered fragmentary for future investigators.

Because of their very isolation and freedom from the possibility of interference, traders on the various Indian reservations of New Mexico and Arizona are frequently instrumental in fostering unauthorized excavations. If the traders do not themselves engage in promiscuous digging they encourage the Indians to do so through purchase of the unbroken specimens collected. The committee has been reliably informed of one such trader, in western New Mexico, who is now seeking to fill an order for one thousand pieces of prehistoric pottery. The committee has before it a typewritten list of over two hundred specimens from cliff-dwellings on the Navaho reservation, in eastern Arizona, for which the collector asks \$5000. This list was voluntarily furnished by the trader who gives, also, the localities from which the specimens were obtained. Clearly this collection was made in violation of the Antiquities Act—the trader's own list is in itself an admission of the fact—but there appears to be no means of punishing the criminal or of preventing his further depredations. The difficulty lies in the fact that no government official seems to have been authorized to enforce the Act of 1906. It is inferred that witnesses to acts of illegal excavation must submit proof else no case exists. In other words, the departments under whose authority the law places all ruins on the public domain seem unwilling, or unable, to assume the responsibility of enforcing the law.

This committee agrees that the Indian trader is chiefly responsible for the present increasing traffic in artifacts from prehistoric ruins in the southwestern United States. The average citizen is less to blame. In consequence of this agreement the following letter was addressed to the Secretary of the Department of the Interior:

"The subject of illegal excavations in prehistoric ruins on the public domain received earnest consideration at the 22nd annual meeting of the American Anthropological Association, held in New York City during the

closing week of 1923, and resulted in appointment of a committee to examine more fully into the matter and recommend such corrective measures as appear most feasible. This committee consists of Dr. A. V. Kidder, of Phillips Academy, Andover, Mass., Mr. Earl H. Morris, of the American Museum of Natural History, New York City, and the undersigned, of the United States National Museum.

The American Anthropological Association includes within its membership of nearly six hundred every professional anthropologist in the United States, thus representing the unofficial opinion of our greater museums and institutions of learning. Individually and collectively these members are actively engaged in the study of American history and seek through original research and investigation, to ascertain the basic truths regarding the American peoples, historic and prehistoric, that the facts may be recorded for posterity. Our joint concern, therefore, as regards continuation of unauthorized excavations in ancient ruins on the public domain is heightened by the obvious fact that such illegal practices destroy the evidence on which our investigations must, from necessity, be founded.

That illicit digging in ancient ruins continues unchecked, especially throughout the southwestern United States, is well known to American anthropologists and others. Most of this vandalism is carried on in direct violation of the law, to judge solely by the clandestine methods pursued. The objects recovered find their way to dealers in curios and Indian artifacts and, ultimately, to individuals. In all such instances the related data are lost and the objects rendered useless for scientific purposes. Nearly every reservation trader is a primary aid to illegal traffic in American antiquities. These traders if not personally engaged in secret digging, encourage the Indians to do so through purchase of the objects recovered. Irreparable damage to the prehistoric ruins is the obvious result and the evidence upon which science depends is lost forever.

As to the remedy: This committee is agreed that existing laws are entirely adequate to meet the conditions outlined above. The Act for the preservation of American antiquities, approved June 8, 1906, (34 Stat. L., 225) and the Rules and Regulations prescribed thereunder, clearly differentiate between legal and illegal excavations in prehistoric ruins and provide effective punishment for the latter. But the Act, if known, is generally ignored by those who profit through excavation and sale of American antiquities. Most ruins now subject to despoliation lie within the Indian reservations in New Mexico and Arizona and on adjacent public lands, including those in southern Utah and southwestern Colorado.

As a means of more effectively enforcing the Act above mentioned the committee members, each possessing intimate knowledge of conditions throughout the Southwest, concur in and respectfully submit the following recommendations: (1) In accord with section 16 of the Rules and Regulations, it is recommended that superintendents of Indian reservations be authorized and instructed to confiscate and forward to the national depository such antiquities as now may be illegally in possession of traders within their respective jurisdictions; (2) that all traders, under penalty of losing their permits, be required forthwith to cease traffic in antiquities absolutely;

(3) that copies of the Act of June 8, 1906, and the dependent Rules and Regulations be posted conspicuously in all Indian agencies and reservation trading posts and in postoffices throughout the southwestern United States. Such widespread distribution should be followed (4) by designation of several field officers who, in accord with sections 13 and 17 of the Rules and Regulations, would be authorized to compel observation of the same and confiscate all antiquities illegally obtained. Through such convenient means, in the opinion of this committee, prehistoric ruins and other antiquities on the public domain may be more effectively protected and preserved until investigated by authorized institutions of recognized responsibility."

In reply to this communication, the following has been received:

"Your letters of March 7, 17 and April 18, 1924, have been received in relation to affording protection against illegal excavations in prehistoric ruins on the public domain and the Indian reservations.

The matter has been taken up with the Commissioner of Indian Affairs, and instructions will be issued to the various representatives of that office in the field to prevent unauthorized excavations of ruins on the Indian reservations, and enforce the regulations promulgated under the act for the preservation of American antiquities, approved June 8, 1906. Appropriate instructions will be issued by the Commissioner of Indian Affairs, and he will be supplied with copies of the law and regulations as soon as they can be printed.

As to the depredations on the public domain, the General Land Office under date of January 28, 1911, and June 11, 1911, issued instructions to its various field officers to render every possible assistance to the Department in the enforcement of the regulations for the protection of American antiquities. The matter has again been taken up with the Commissioner of the General Land Office with a view to issuing further instructions."

The Department's letter thus holds a promise that some sort of action is finally to be taken. Just how successful these efforts will prove remains to be determined. Similar instructions in the past have been too easily forgotten. But the committee feels that this subject should not be set aside until some real effort has been made toward enforcement of the Antiquities Act and the public is well aware of the situation. Mere issuance of instructions is insufficient. There must be enforcement of the law. Vandals, wherever found, should be effectively punished and collections illegally obtained should be confiscated. Otherwise there is but scant hope of realizing the clear intent of the Antiquities Act, namely, protection and preservation of that small portion of our once numerous prehistoric ruins still remaining under federal jurisdiction. The law stands but it is being constantly ignored, and with impunity.

In order that this subject may be still further pressed, if need be, the committee recommends that each member of the Association and especially those engaged in southwestern research, forward to the committee members data on such specific instances of illegal excavation as may have come to their individual attention. With additional information at its disposal the American Anthropological Association will be able to present a stronger case and seek the more speedily to check such vandalism as that mentioned in the preceding paragraphs. It is desired that the name and address of any unauthorized excavator be furnished when possible; that the location of his operations and the nature of his finds be given together with any additional, helpful data. It appears obvious to the committee that the Antiquities Act will not be rigidly enforced unless this Association takes the initiative in the collecting of facts with which to impress the administrative officers of those Government departments having jurisdiction over public lands on which prehistoric remains are situated. If there is really a lack of responsible authority that want must be met. Minor offenders will quickly curtail their fluctuating enthusiasm if the commercial pothunter can be brought to task and the fact of his punishment given sufficient publicity.

Respectfully submitted,

(Signed) NEIL M. JUDD, *Chairman*

May 26, 1924.

ANTHROPOLOGICAL NOTES

DR. GLADYS A. REICHARD, of Barnard College, and Dr. P. E. Goddard, of the American Museum of Natural History, are back in the Navaho country continuing the work which they commenced last summer. The creation story, the origin and growth of the Navaho tribe, and family and social life are the particular objects of their research.

PROF. BYRON CUMMINGS of the University of Arizona is again engaged in excavating ruins at Cuicuilco, Mexico, an Archaic culture site.

MESSRS. HANS G. HORNBOSTEL and KENNETH P. EMORY of the Bernice Pauahi Bishop Museum of Honolulu are at present conducting field work in the Caroline Islands

DR. JOHN ALDEN MASON who has been with the Field Museum of Natural History as Assistant Curator of Mexican and South American Archaeology is now associated with the American Museum of Natural History.

MR. MATHEW STIRLING has left the United States National Museum where he was Assistant Curator of Ethnology to engage in private business.

THE PENNSYLVANIA FOLK-LORE SOCIETY was organized on May 23, at Harrisburg, Pennsylvania, for the purpose of collecting and publishing folk-lore material native to the state. Bishop J. H. Darlington was elected president; Dr. J. B. Stoudt, vice-president; H. P. Hayes, secretary and treasurer. The newly organized society will affiliate with the American Folk-Lore Society.

DR. GRAFTON ELLIOT SMITH is giving in Los Angeles, beginning July 20, five lectures on the Evolution of Man, as part of the new course in General Science arranged by the University of California Summer Sessions Department with the aim of presenting to the students the present position and trend of modern scientific work. During his stay in Southern California he expects to study the human remains recently discovered at Los Angeles.

DURING the summer vacation, Mr. W. J. Perry, Reader in Cultural Anthropology at the University of London, in collaboration with a

party of research students in anthropology and geography, is exploring Brittany for the purpose of checking upon the spot a map of megalithic monuments and their supposed association with ancient mining activities.

MR. NEIL M. JUDD, who is in charge of the Expedition of the National Geographic Society at Pueblo Bonito expects to return to the National Museum early in September.

DR. A. V. KIDDER is spending the summer at Pecos, New Mexico, where he has resumed excavation.

DR. ALANSON SKINNER has resigned from the service of the Public Museum of the City of Milwaukee to join the Museum of the American Indian, Heye Foundation.

A NEW PUBLICATION has been received by the "American Anthropologist," namely, "Sociedad Española de Antropología, Etnografía y Prehistoria. Actas y Memorias." As the title indicates, it is the organ of a society recently organized in Madrid for the purpose of studying matters of general and local interest in the field of anthropology, ethnology, and the allied sciences. It is not a periodical but is published at the will of the society, this body having previously heard the articles and memoirs which comprise the major portion of the journal. Reviews of books and brief communications complete the volume. The titles of the articles appearing in the first issue are indicative of the wide scope of the work and the interests of the Sociedad Española de Antropología. These are as follows:

Baüer y Landauro, I.: El Rif y la kábila de Beniurriaguel.

Ayuso, M. Hilario: Un antropómetro para viaje.

Cabre y Aguilo, J.: Una necrópoli de la primera edad de los metales, en Monochil, Granada.

Mergelina, C. de: La necrópoli tartesia de Antequera.

Hoyos Sainz, L. de: Etnografía española: Cuestionario y bases para el estudio de los trajes regionales (Continuará).

The profuse illustrations accompanying the articles are significant and interesting.

All communications should be addressed to the Sociedad Española de Antropología, Museo Nacional de Antropología, Paseo de Atocha, 13, Madrid.

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NEW SERIES

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No. 4

KINGSHIP IN BABYLONIA, ASSYRIA, AND EGYPT

By H. F. LUTZ

THE endeavor to trace the origin of the institution of kingship is recognized to offer great difficulties. A variety of social forces may have evolved it at different times in various ways. It cannot be my task to examine the question of origin, this I have to leave to scholars devoted primarily to the study of social institutions. My work will be limited to the examination of certain phenomena, which, I hope, will throw some light on the development which the idea of kingship has undergone among the Sumerians, Babylonians, Assyrians, and the Egyptians. But, though, I leave the question of origin of this particular institution untouched, we may assume that kingship was at first synonymous with leadership. The various ways of development that kingship has taken would *a priori* have to be explained from the especial emphasis that had been laid on this or that especial aspect of leadership. The emphasis might have been placed in one instance on military leadership, in another on social leadership, or in a third instance on intellectual leadership. In the last case kingship may not infrequently have developed out of a purely religious leadership, but any generalization that kingship must invariably have originated from religious leadership bears the stamp of improbability.

Kingship is subject to the general trend that any social organization, of which it is a part, will take. The basis of social organizations, however, is not dependent on religious beliefs and practices, they simply mold them, but more especially on economic factors. This is clear from a consideration of the origins of the matriarchal and patriarchal systems of social organization. Both systems have

succeeded each other in the ancient Near Eastern area. The earliest Semites shared with the southern Mediterranean race or races, particularly with their kinsmen, the Hamites, the decided accentuation of matrilineal aspect of society.

At this stage the chief deity of the Semites was the great mother goddess Tiamat (among the early Babylonians), who survived as the Sumerian goddess Bau, or Nintu (the "Lady of Life"), and as the Semitic goddess Ishtar. This great mother goddess of the early Semites was the chief deity of fertility, the creatrix of the gods, men, animals, and the plants. Her name, in the various forms of Ishtar, Ashtart, Athtar, Attar, or Ashtoreth, was common to all Semites and, therefore, it appears, that the worship of this mother goddess was not restricted to one or more groups among them, but that it was universal, held by them long before they were grouped into the diverse political units or social units, in which we find them in the course of time. The mother goddess was frequently represented as a goddess half woman and half serpent, or, as in Egypt, simply as a serpent, the emblem of fertility.

The belief in a great mother goddess seems to have been shared, as stated, by most or all the early Mediterranean peoples, showing therefore, that they must have been at a certain time in the same or at least a very similar cultural stage. But at the dawn of history we notice that this stage of social organization had already been overcome, and even the succeeding stage of the patriarchal system had become a thing of the past in at least the two great cultural areas of the Mesopotamian and the Nile valleys. Whether the elimination of the matriarchal social system was due to a process of fusion between father worshipping and mother worshipping peoples, that is whether it was due to a religious fusion brought about by the fusion of diverse racial elements, or was due to internal social evolution, is beyond us to determine. Remnants, however, of the older form of social organization have been preserved in certain religious phenomena which persisted throughout the history of the Ancient Near East, and which have tenaciously been maintained in certain places even to the present day. Since the social organization of the matriarchate is closely linked with that stage of civilization in which a hunting or shep-

herd people passes over to the stage of more intensive agriculture (which is taken up by the women ?), it is possible that this particular institution of the Semites and its concomitants reflects the stage in which they had settled down to agriculture.¹ The later change to the patriarchal social institution may then reflect a stage in which to the Semitic agriculturist arose a rival in the settled city dweller.

In view of the manifold traces of the matriarchal system in the Near East, the supposition of the patriarchal system has rather been taken for granted without having the matter put to the test of proof. That this supposition, however, seems to be correct, will perhaps appear more clearly from the following discussion. At any rate, between the prehistoric period in which a matriarchal social organization held sway, and the beginnings of the historical period, there is a break which has as yet not been as thoroughly examined as the subject warrants.

At the dawn of history we find in Babylonia among the Sumerians cultural elements which show that they must have for a considerable time dwelt in places where they were surrounded by the cultural influences of the Mediterranean peoples.² We find them, it is true, no more under the social system of the matriarchate; that had broken down prior to the appearance of the Sumerians in southern Babylonia, but traces of it appear in their religion, where (apart from Bau, or Nintu) Ninkhursaga, "the lady of the mountain" seems to have been their great goddess, as well as in their laws and social organizations where woman still held a more exalted position than she held among the Semitic settlers in Babylonia.

¹ Matters discussed here roll up once more the whole question of the original home of the Semites. Since the belief in a mother goddess was universal among the Semites, and since the matriarchal system may reflect a stage in which the people had settled down to agriculture, it becomes unthinkable that the original home of the Semites could have been Arabia. Professor Clay of Yale in some of his contentions for Amurru is no doubt right, although his whole method of approach to the subject is wrong.

² Lately the Sumerian language has been compared with the Caucasian languages, a widely spread group, whose links reach from Western India to the Gulf of Biscaya (see *Orientalistische Literaturzeitung*, iv, 27, 1924). If this should prove correct some day, it would explain why the Sumerians shared the cultural influences of the Mediterranean peoples.

The Sumerian word for mistress, princess, is *nin*, ideographically written *sal* "woman" plus *ku* "great." The word for queen is *nin-gal*, that is, "the great mistress." Of considerable importance furthermore is the fact that the idea of rule, government, is expressed by a word *nam-nin*, that is, by the element of abstraction *nam* plus *nin*. It is perhaps possible that also here we have an indication of an earlier social organization, and that such words as *nam-en*, that is, *nam* plus *en* "lord," for the expression of "rule, government," and *nam-lugal*, i.e., *nam* plus *lugal* "great man," or "king," are a later development. Remnants of a time when the matriarchal organization still flourished are also seen in the names of certain male divinities who still in the historical period have the element *nin* attached; so especially the god Ningirsu. This latter instance betrays two important facts: namely, that the god originally was a female deity (the "mistress of Girsu," one of the oldest quarters of the city of Lagash), and secondly that the Sumerians apparently were in southern Babylonia practicing the matriarchal customs for some time before they gave way to a new social system. The fact that queen Ku-Bau ruled over the city-state of Kish, after she had risen from a position as low as that of a keeper of a wineshop, could of course not be brought up as a remnant of matriarchal organization, but it shows a condition (a woman on the throne) which would have been intolerable among the earliest Akkadians.

How under a purely matriarchal social system the Sumerians executed the office of rulership is subject only to speculation, and as such can not occupy us here.

An examination of various terms employed in order to express the idea of ruler, king, etc., will show that while remnants of an older social organization are still discernible, the inhabitants of Mesopotamia had passed from that stage to the stage of patriarchal organization. The latter also falls still within a period which to us at present is prehistoric.

The earliest records of Sumer show that it was divided into numerous city-states. Some of the rulers of the small states bore the title *lugal* "great man," but more often they called themselves *isag*. It has become customary to say that the latter title was

employed by a sovereign who had succeeded in becoming the overlord of a neighboring *lugal*. Others have reversed it and have held that the title *isag* designated the ruler of a city-state who was under the overlordship of a *lugal*; but that the title *isag* was also borne by some rulers who were absolutely independent, in which case the *isag* seems to have been so named as the earthly vicegerent of the city-god. This much appears certain in the early historical time, that the title *lugal* is the more important one. Thus Sargon I defeated Lugalzaggisi, king of Uruk, "and 50 isaks," and Sargon's successor Erimush took prisoner the king of Ur together with his isags. And of Utug, ruler of Kish, for instance, we know that, although he had lifted his city to a position of sovereignty over others, he still called himself *isag* and not king on his votive vase deposited in the central sanctuary of the Sumerian national god Enlil at Nippur in commemoration of a victory over the land of Khamazi. The kingship was inseparably connected with Enlil; he was the one supreme god, who probably through oracular decisions bestowed the title *lugal kalama* "king of the land" upon the rulers. Utug may have sought this title when he gave to Enlil a thankoffering for his victory. At all events, his successors are in the possession of the title *lugal*.

Originally there may have been no differentiation of the two titles. Both expressed leadership; the variation of the words may simply imply a difference in the social organization out of which leadership arose.

Let us first consider the term *isag*. It is ideographically written *pa-te-si*. Analyzing the various component parts of the ideographic writing, we find that it is made up of the word *pa* plus *te* plus *si*. *Pa*, however, as such writings as *pa-gibil-ga* (Akkadian: *abi abi* "grandfather") show, is, like *pab*, a word designating "father." *Te* in Akkadian means *simtum*, "distinction, decoration"; and *si* equals *šapâku* "to heap up." *Patesi* therefore means: "the father upon whom distinction has been heaped." In view of such a word as *né-si-ga* "potentate" which is composed of the elements *né* "power" plus *si* (*sig*) plus *a* (participial ending), *i.e.*, "endowed with power," or "He who is endowed with power," one might also take the word *patesi* as "the father endowed with distinction,"

or simply, "the distinguished father." The word *pa*, like *ab*, apart from its meaning of "father" in the physical sense, was used as an honorific name in the early historical period, so that it served as a mark of distinction for those men who were versed in the arts and sciences of the time, and came to mean "scribe," "astronomer," "tablet-writer." But that the Sumerians used also the various words designating "father" in the sense of "chief," "chieftain," is noticeable in such honorific titles as in that in which Enlil, the great god of Nippur, is called *ab-ba-an dingir-ri-ne-ge*, which is not "the exalted father of the gods," (Enlil was not figuring thus in the Babylonian religion) but "the exalted chief of the gods." For such reasons we may safely translate *pa-te-si* by "the exalted chief."

Now I think that I will be able to show that also the word *isag*, which was the pronunciation of the ideographically written *patesi* carried the same idea as the one which we have elucidated. From the Akkadian *iššakku*, a loanword of *isag* we perceive that the latter is a compound of two elements, i.e., *i* plus *sag*. And it must be emphasized here that even to the Babylonian Semites the composite character of *isag* was well known, otherwise they would not have doubled the sibilant. The doubling of the sibilant was due to the rule that all loanwords have to be doubled at the close with the addition of the Semitic nominal ending *u* (*šakku* = *sag*), but since the first element did not have a consonant, the first consonant of the second element received the doubling. *I*, in Sumerian, however, means "to be exalted" (Akkadian: *nādu*), and "exaltation" (Akkadian: *tanittum*), while *sag* means "head," which like the English "chief" going back to French *chef* "head," has also the meaning "chief." *I-sag*, therefore, through its meaning "the exalted chief" testifies to the correctness of the original meaning of the ideographic writing *patesi*.

The title of *patesi*, or *isag*, thus had originally no religious aspect. While a statement as that which says that the civilization of Babylonia was dominated throughout by religion is correct, it is true only of the historical period. In prehistoric times in place of a religio-political organization another factor must have been the dominating one. An organization in which the word

"father" is *mutatis mutandis* taken over to designate a chief must have been patriarchal. This change from the matriarchal to the patriarchal organization, of course, changed also the religious views of the people, and instead of the great mother goddess, male divinities arose to the lofty position of "exalted fathers," as particularly in the case of Enlil of Nippur.

The title of *patesi*, disregarding change in meaning attached to it at later periods, would show that its holder was simply the chief of a kin, and the whole term may be similar in meaning to the Old-English *cyning*, *cyng*, *cing*, "king" as the representative of the *cynn*, "kin." We must assume that originally each Sumerian tribe elected its *patesi* or *isag*. Only when the tribal organization had disappeared, and a political organization had evolved did the element of hereditary holding of office no doubt come into usage. The term itself, however, does not suggest either hereditary or non-hereditary usage.

While the analysis of the terms *patesi* and *isag* allow us to trace back their original meanings, it is impossible to arrive at any certain results in the case of the title *lugal* "great man," which the Semitic Babylonians rendered by the word *šarru* "king." The title may have been co-existent from the beginning with that of the *isag* title, without any degree of difference. It may, however, also represent a development which arose out of the social organizations headed by the various *isags*. This at least is true in historical times where we notice the gradual deterioration of the old title *isag*, *iššakku*, from that of an independent chieftain sinking to that of a chief owing allegiance to a *lugal*, and finally designated merely the office of a high royal official, besides forming one of the more inferior links in the large chain of royal titles of a later time. Also the title *lugal* was quite dissociated from any religious implication. He was merely the "great man" who distinguished himself either through physical strength, mental superiority, or large possessions from the other people. Any religious implication which the title of *lugal* carries in historical time is something absolutely foreign to the Sumerians, and was taken over by them with many religious beliefs and practises from the Semites. The

"great man" title may originally have been but a protest title over against the title of *nin* "the great woman."

We now come to the discussion of a very important aspect of the idea of kingship among the Babylonians. While the Sumerians originally had not connected the idea of kingship with any religious belief, matters begin to change when the spreading influence of the Semitic Babylonians exerted itself more keenly. The king comes to be considered as a special creation of the gods, whom the ancient mother goddess Ninkhursaga nourishes with holy milk, and whom the various gods endow with special gifts of physical and mental power, in order to become a perfect likeness of the gods. I say that this change is due to the Semites, who held quite an opposite view regarding kingship than did the Sumerians. To the Semites the king (omitting earlier stages of development of kingship among them of which we have no traces) at the beginning of historic times is essentially a son of the divinity, which relation is even expressed in the very word for king, i.e., *šarru*. This Semitic word is a noun-formation of the root *šararu*, meaning "to be little, to be small." As a verb *šararu*, however, practically disappeared in this sense from the language of the Babylonians. Its presence is only indicated by such words as *šerru* "small, weak," and *šurru*, *šurratu* "beginning." In Babylonian the verb has taken on the more specialized meaning of "to rise brilliantly, be brilliant, shine," though *šararu* in the sense of "to decrease," "to become little" is still used. The Egyptian verb *šrr* "to be small, to become small, to be diminished" is, of course, one and the same as Babylonian *šararu*. As a noun it means in Egyptian "boy, youth, little man." The king was therefore called *šarru*, "the little one," the "child" in view of the divinity back of him. While the Sumerians originally held an intensely human viewpoint of kingship, the Semites held a divine viewpoint of this institution. The Sumerian ruler was at first simply a "great man," or a "distinguished chief," while the Semites introduced the idea of divine sonship. This idea permeated Sumerian thought, and expressions such as that the king "is created in the mother's womb by the gods"³ and that he is "raised (by the gods) like of a father and

³ Vorderasiatische Bibliothek, iv, 122, 1, 25, 218, 1, 4.

mother,"⁴ etc., are finding their explanation in a correct etymological interpretation of the name *šarru*. While the emphasis in time was placed on the sonship relation by Semites and Sumerians, this relation of the king to the god or gods in itself did not necessarily confer upon him actual divinity. It was at first merely a case of adoption. But from this the step towards a divine sonship relation through actual divine birth was not only logical, but was actually carried into practise and that very soon. The early Semitic kings introduced the view that with sonship also divinity was conferred and Sargon and Naram-Sin accordingly prefixed their names with the determinative of god. The Sumerians next followed suit by claiming actual divine birth. Naram-Sin even called himself "god of Akkad" and he appears on his stele with the horned cap which was reserved for the gods exclusively. And later on the dynasties of Ur, Isin, and Larsa employed the same custom. Whether any kind of political success and title of possession were necessary for this act of pronouncement of divinity is not known, but it was brought about by a special act of government. The divine kings were considered direct sons of Enlil of Nippur. While Ninsun is called the mother of these divine kings, goddesses like Innina and Anunitum were considered their spouses. Temples were erected in their names, in which the kings received sacrifices while still alive and after their deaths.

This development of the idea of kingship received its check at the advent of a new immigration into Babylonia. With the coming of the Western Semites towards the latter part of the twenty-third century B.C. the royal claim towards divinity gradually was given up, and the determinative of divinity was omitted before the kings' names. Hammurapi, however, still kept himself more closely to established traditions, as we see him do also in other respects, and called himself "god of the kings,"⁵ "brother of the god Zamama,"⁶ and "the sun-god of Babylon."⁷ Still into the time of Ammizaduga (c. 1977-1957 B. C.) his statue

⁴ Rawlinson, M. C., *The Cuneiform Inscriptions of Western Asia*, IV, 55, no. 2, 10b

⁵ Code of Hammurapi, III, 16.

⁶ Code of Hammurapi, II, 57.

⁷ Code of Hammurapi, V, 4.

received divine worship, while Ammiditana, the predecessor of Ammizaduga (c. 2014-1978) erected the statue of Hammurapi's successor Samsuiluna (c. 2080-2043) in the temple of E-namtila in commemoration of the centenary of the latter's accession to the throne. The kings of the Kassite dynasty and the Néo-Babylonian kings continued to move in the traditions established by the First Dynasty kings, in which the ruler appears in the threefold capacity of military leader, executive officer, and supreme judge.

In Assyria kingship appears to have developed out of the priesthood, more especially out of the priesthood of the god Ashur. This at least seems to be the case in the early historical period of that kingdom. What lay back of it is unknown. When the first historical documents of Assyria begin to appear we notice that the Assyrian rulers are at about the same stage of development as the Sumerian *patesi* under Semitic influence. But in Assyria the religious character of the *isagship* is much more emphasized than in Southern Mesopotamia. The fact is that in Assyria the *patesi*-ship or *isagship* was from the first synonymous with priesthood, for the title *iššakku* is indiscriminately used also for *šangu* "priest." In a document of Ashur-uballit, who ruled as late as c. 1390, this ruler of Assyria designates himself simply as *šangu ilu Ašur*, "priest of Ashur," and enumerates six of his ancestors whom he likewise gives only the title of *šangu*. Zariqu, one of the very early rulers of Assyria called himself in his inscription from the temple of Bêlat-êkallim, *imeru zikru Ašur^{ki}* "the male ass of Ashur," omitting the title *iššakku* altogether. He ruled over Assyria during the time of Bur-Sin, king of Ur, (c. 2395-2387) under the latter's suzerainty. Ilushuma, the Assyrian contemporary of Sumu-abu, the founder of the First Dynasty of Babylon, also calls himself merely *iššakku* of Ashur and calls his father Shalimakhum by the same title. In fact all the rulers of Assyria down to about the time of Shamshi-Adad II (c. 1860) are but *iššakku*, while Shamshi-Adad II, son of Irishum III, took to himself the title of the later Assyrian monarchs: *šar kiššati* "king of the world." Arik-den-ilu calls himself *šarru dannu šar mat Ašur* "mighty king, king of Assyria" and attributes the title *šarru* "king" to his father Enlil-nirari, to his grandfather Ashur-uballit,

and his great-grandfather Eriba-Adad. From the present historical material one seems to be able to infer that the kingly title became fixed among the rulers of Assyria about the latter part of the fifteenth century B. C. With Adad-nirari I (c. 1300) appear more generally the heapings of royal predications.

While thus originally the simple title of *iššakku* with a distinctly priestly flavor was the sole title of the rulers of Assyria, here and there appears also the title *šakin Enlil*, literally "the appointed of Enlil." This would indicate that, like the rulers of Babylonia, also the Assyrian rulers endeavored to establish their legitimacy to the throne through a special sanction of the priesthood of Enlil at Nippur. In those instances where the early *iššakku* of Assyria held also the title of *šakin Enlil* this title invariably preceded that of *iššakku*.

Gradually there developed a distinct nomenclature in which the various royal titles received their special positions in the lengthy chain. Thus it became customary, when the title *šarru* "king" did not suffice anymore to call the ruler *šar kiššati*, "king of the world," then also *šarru dannu*, and finally *šarru rabu* "Great king." The position becomes ultimately as follows: *šarru rabu* "Great king," *šarru dannu* "mighty king," *šar kiššati* "king of the world," *šar mat Ašur*, "king of Assyria." At a time, however, when the title "Great king" was not yet in use the title *šar kiššati* "king of the world" preceded that of *šarru dannu* "mighty king." So for instance, under Shalmaneser⁸ I and Tukulti-Nimurta I.⁹

A careful study of the nomenclature of the Assyrian rulers will disclose the fact that it is absolutely wrong to maintain that the Assyrian king, like his southern colleague, was emphatically a military leader, an executive officer, and a judge. This was the case with the rulers of the First Dynasty of Babylon, but not with the Assyrian kings. Of course, the historical inscriptions particularly would give this impression, but greater emphasis was placed on the priestly office of the Assyrian monarch as the *pontifex maximus*. Kingship and priesthood are in fact synonymous terms in Assyria. Thus on the broken obelisk, Ashurnasirpal

⁸ Schroeder, Otto, *Keilschrifttexte aus Assur historischen Inhalts*, Heft II, No. 43.

⁹ *O.c.*, No. 48.

speaks of his kingship as of his priestship,¹⁰ and also elsewhere we receive the impression of the interchangeable use of the terms kingship and priestship in Assyria. Most decisive, however, is the fact that the Assyrian coronation ritual itself substitutes or employs for the term kingship the word priestship in order to emphasize the special dignity of the Assyrian ruler.

According to the ritual (which implies that the new ruler was probably crowned in the temple) the monarch was invested with the royal insignia and annointed (?) with oil,¹¹ similar to the practise in Egypt and among the ancient Israelites. The priest officiating addressed the king with the following words, apparently after the crown had been placed on his head: "The crown of thy head signifies: Ashur and Ninlil are the lords of thy crown. May they protect thee for a hundred years. May thy foot in the temple and thy hands at the altar of Ashur, thy god, be pleasing. May thy priestship (*šangutu*) and the priestship of thy sons be pleasing before Ashur, thy god. May Ashur especially (?) in the temple give unto thee speech, hearing, granting of favor, truth, and justice."¹² The ideal conception of the Assyrian kingship which grew out of its historical development rested on the fact that the king was *pontifex maximus*. This explains his independent position to the priesthood, a position which was much freer and unrestrained than that of the Babylonian kings, and, *vice versa*, the fact that the Assyrian priesthood has never played such a dominating rôle as in the South. I say that the priest-kingly aspect of the royal office was the ideal conception of kingship in Assyria. But that the ideal was frequently not striven after, or that individual monarchs placed the emphasis of their office, according to their special likings, on this or that phase of it, is only natural. So it came to pass that gradually a tradition crystallized which visualized the Assyrian ruler especially as a war-lord, an idea by the way which still in our day even among scholars is the orthodox or classical conception. This however is wrong.

¹⁰ *Nimurta u Nergal ša sangutsu iramu*, "Nimurta and Nergal who love his priestship."

¹¹ *Ana kakkadi šarri igruru šamna*, Ebeling, Erich, Keilschrifttexte aus Assur religiösen Inhalts, No. 135:4, *ana kakkadi šarri izaliu šamna*, *ibid.* No. 135:5.

¹² *O.c.*, No. 135 lines 7 to 13

And when, towards the end of the Assyrian empire, we see that Ashurbanipal "invested his younger brother Ashur-mukin-paleia with the highpriesthood before Ashur (?) and his youngest brother Ashur-etil-šame-iršiti-uballitsu with the highpriesthood before Sin,"¹³ this action on the part of the king was not wrought in distinct antagonism of seeing his brothers taking to the military career, out of fear that as military leaders they might some day appear as dangerous claimants to the throne, but this action was due to the general view taken in Assyria that the king and his house were first of all dedicated to the service of the godhead, and constituted most emphatically a family whose members were the real mediators between the godhead and their people.

Concurrent ideas, such as military leadership or administrative leadership, or executive and legislative functions developed in the course of time with the growth of the kingdom and the new tasks with which it was confronted, so that one or the other aspect may naturally have been stressed according to the individuality of the various rulers, or according to the needs of the time, but nowhere can we notice any trace that the Assyrian idea of kingship as sketched above was ever given up. In case that a ruler emphasized particularly one certain domain of his official functions, he may have had a substitute who took over his priestly functions, but there can hardly be any doubt that on certain special days of the ecclesiastical calendar the king himself had to perform the functions as *pontifex maximus*. Assyrian kingship thus bears a distinctly religious character, although it is void of supernatural aspects.

Turning our attention now to Egypt we shall lay stress more on the matter of the development of the idea of kingship in this country than on the description of this institution as a fixed entity in historical times.¹⁴ The Pharaoh of classical Egypt is

¹³ Vorderasiatische Bibliothek, VII, 250, 16 ff.

¹⁴ The reader is here referred to Moret, *Du Caractère religieux de la Royauté Pharaonique*, Paris 1902, Baillet, J., *Le Régime Pharaonique dans sa Rapports avec l'évolution de la Morale en Égypte*, Blois 1912, Thierry, J., *De religieuze Beteeknis van het Aegyptische Koningschap: I. De Titulaturer*, Leiden, 1913, Foucart, G., *King (Egyptian)*, in Hastings, J., *Encyclopaedia of Religion and Ethics*, Vol. VII, 1915; Wiedemann, *Das alte Aegypten*, Heidelberg, 1920, pp. 53 ff.

conceived of as the son of the sungod, and, therefore, as himself divine. His will is the expression of the godhead. This is the most striking characteristic of the Egyptian king; all his various functions are but the outflow of his divinity. This conception of divine sonship we have already met with above among the early Akkadians, but in Egypt it was developed more fully because here it received no check from the outside, and it remained the orthodox conception throughout, so that in skimming the subject in a superficial way one receives the impression of ossification. But this was not the case. Ideas change or develop, even though older names are retained as vehicles of more advanced thought, and also the divine institution of kingship in Egypt did not remain secure from the changing influences of time.

The continual dynastic changes and revolutions within and without the royal court give the dementi to the orthodox Egyptian view of the king as an incarnation of the godhead. And though with this accepted view went hand in hand absolute power, political and social conditions as they developed often mitigated and even abrogated this power and the king often became simply a constitutional ruler. Thus, for instance, when an anti-foreign wave swept over Egypt in the time of Apries who was suspected to be a Graecophile, a nationalist rebellion broke out which brought the king to the verge of dethronement. But at first the sentiments regarding the high office of kingship were still too strong to permit the abrogation of the royal dignity, or to lay hands on the very life of the king. Yet, a few years later, when Apries had tried to defeat the Egyptian general Amasis, who had been made co-regent with him in 569 B.C., such sentiments had completely vanished and Apries, defeated in battle, was slain.¹⁵ It is no doubt an exaggeration to say that Amasis essayed to replace a monarchy of divine right by a monarchy of popular right, but that much at least is certain that popular right and sentiment in this instance triumphed over royal divine prerogatives and rights. Or, to take another example, as a result of Amenhotep IV's religious reform movement Egypt had passed

¹⁵ See Herodotus, II, 169, whose account seems to be more correct than that of Amasis (Breasted, *Ancient Records*, IV, pp. 509 ff.).

through severe internal struggles. The tax-collectors had oppressed particularly the poor; a wild soldiery, which found itself now unemployed in wars with foreign countries, moved about the country plundering and stealing even the articles which bore the royal seal, and desecrated and robbed the tombs of the Pharaohs. The very officials whose business it was to control and rectify all abuses were not much better and engaged in filling their own pockets. Under such conditions Haremheb seized the throne and by liberalistic legislative reforms which were to benefit especially the interests of the physically and economically weak over against the governmental agents, their oppressors, he acknowledged the principle of popular right even in the lowest social strata. It would be wrong, however, to term Haremheb a socialist king and a philanthropist. His reform edict may have been due not so much to inner necessity as far as the king was concerned, as an acknowledgment of the need of a partial abrogation of royal and state right, but may rather have been due to a correct calculation of the ultimate ends to which such untenable conditions are leading. But in the end he himself became the victim of his own reform movement, as happened also in the case of Urukagina, an early ruler of Lagash in Babylonia. In regard to Amenemhet I we know that an attempt at assassination had been made on his life, and a second one some ten years later seems to have ended in the death of the king. Even the orthodox view of the divinity of the king was no shield to protect a ruler. It was a dogma that worked well in times of peace and security, but its claim was disregarded whenever social and political conditions found it to be an obstruction.

The development towards the idea of divine kingship cannot be as easily traced in Egypt as in Babylonia. As there, also in the Nile valley it may have grown out of the view of adoption. Already Snefru and Khufu (Cheops) call themselves great gods.¹⁶ Besides being the "great god," the king is also a "good god." As far as we can go back in the written documents we meet with the conception of the divine kingship in Egypt. But an examination

¹⁶ Lepsius, *Denkmaeler*, II, 2

of some of the royal epithets will reveal much that lies anterior to this conception. One of the oldest terms in Egyptian to express the idea of king and which has generally been rendered "sovereign" is the word *ity*. Grammatically *ity* is an adjective of relation. The orthography with the two crocodiles which is an old one shows that this ancient word was *aty* > *ataay* > *ataiay*.¹⁷ The word, therefore, contains the idea "the fatherly, der Vaeterliche." The word *at* (Turkish *ata*; Sumerian *ad*) "father" is onomatopoeic and as such is found in many languages. But though Sumerian *ad* is essentially one and the same as Egyptian *at* (*it*, Coptic: *iot*), in Sumerian the word *ad* is not so much used in the physical sense of "father," but in the sense of father in his capacity of "decider," and the verbal form *ad-ge* or *ad-gar* which literally means "to act as father," has taken on the specialized meaning "to decide" and is known only in this sense. The *ad-gé-gé* is the *máliku*, the "councilor, decider," a word which among the Semites in general came to stand for "king," although the idea among the latter in the course of time seems to have changed and we see them imply in such words as *melek* the idea of ownership. Possession, ownerships became in time the distinguishing characteristic of the Semitic rulers.

That the early Egyptians shared with the early Semites the emphasis of attribution of judicial function and counselorship to their rulers, becomes also clear when we consider such titles as *r'-hry*, literally, the "chief mouth," then simply "chief, ruler," and *rp't = r'-p't*, literally, the "mouth of the people," which later came to mean "prince, hereditary prince, successor to the throne." While these two titles in historical time do not pertain anymore to the king, they nevertheless show what development kingship had taken in Egypt. They were titles of tribal (?) chiefs or rulers of independent political units in prehistoric Egypt, which were retained in historic times in a modified sense.

¹⁷ An original *ad ty* > *ad.taay* > *ad.taiay* is not impossible; Sethe, *Das aegyptische Verbum*, I, § 307, is not justified to press the form *at* over against a form *ad*, for in this instance assimilation may have occurred. Since the word for father in Egyptian is *it* (with the *a* vowel instead of with *i*; *at*) I prefer for this reason the reading *aty* over against the reading of *ad.ty*.

Most important, however, for a real understanding of what lies back of the idea of kingship as conceived of in the historical period is the elucidation of the word *hm*, which is universally translated by "majesty." The word is in use from the very beginning and therefore one would *a priori* doubt that any such idea as "majesty" could have been conveyed by it. And since the etymological investigation of the word, as far as I know, has never been attempted, I shall enter into it somewhat more fully. The word is to be connected with the Semitic root *khamamu* "hold, grasp, fix, lead, govern," and is exactly conveying the same thought as Greek κυβερνήτης, or κυβερνήτης, for also in Egyptian the word for rudder is a verbal noun formation of the same verb *khamamu*, i.e., *hmw*, of which the doubling of the labial *m* is still to be seen in the Coptic *hemme*. The verb itself in the sense of to "lead, guide" is also preserved in Egyptian.¹⁸ In Babylonian *khamamu* is a synonym of *tarašu* "to direct" and of *akhazu šukami* "to have intelligence." *Hm* is therefore the Egyptian rendering of Babylonian *khammu* (= *khamimu*) "ruler, regent." In Babylonian the verb is especially used in the sense of fixing the laws; thus the god Nabu is a *khamimu parše širuti* "one who fixes the lofty decrees," and of Ishtar it is said that she is one *ša rikis tereti khammat* "who makes fast the bond of the law." While from the Babylonian side there is no doubt that the word is eminently connected with the idea of guidance in a legal or judicial sense, this idea cannot immediately be taken over to Egypt and applied there. We can only conjecture that, in view of striking parallels, such a meaning may also have been attached by the Egyptians to the word *hm*. However that may have been, this much is certain that *hm* is to be taken as an active participial form, *khammu*, *khamimu*, and means "the one who guides." The word *hm* which later came to mean "slave, servant," was a passive participle with the meaning "he who is guided, ruled, governed, directed." Originally, therefore, the odium of servitude cannot have been attached to the word.

¹⁸ See for instance, Moeller, G., Hieratische Lesestücke, Heft 1, plate 6, line 15, or Gardiner, in Literarische Texte des Mittleren Reichs, II, plate 1, line 15.

An additional designation of the Egyptian king needs examination, namely the title which has become more than any other the most popular to express the idea of kingship. I refer here to the title "pharaoh." The customary explanation has never appealed to me, and I hope to be able to offer a more satisfactory one in its stead, one that is more in harmony with the general trend of thought at a more primitive age. The word "pharaoh" is taken to designate the ruler as the *per-aa* (*pr-*), the "great house," and this designation is compared with the modern "Sublime Porte" as the designation of the former Turkish rulers. It is maintained that the king is so named out of respect, which does not name him directly, but his dwelling. Such an exalted position of the king as is implied in this explanation can not have been the state of affairs from the beginning when the word came for the first time to be used. That is rather to read modern European conditions into a state of affairs as they existed in primitive times. For this reason one is compelled to reject this explanation. Of course, if we would simply explain it more concretely as "he who dwells in a large, spacious dwelling," supplying the idea of dwelling in a place, we could get rid of the chief obstacle for making the explanation our own. But this would be merely a conjecture, with which one should not operate, and from the fact that the earliest temples and shrines of Egypt were of the most miserable construction, and were mere reed-huts, we may doubt whether the Egyptian chiefs lived in much more stately dwellings than their gods. The explanation of the word which I have to offer is more to the point and, (this is important) finds its parallel in the Near East among more contemporary peoples. The word has absolutely nothing to do with the word *pr* "house" but is a verbal noun from *pry* "to come forth, to appear, to sprout forth, to trace the origin from, to be begotten of," and the word *pr-* simply means "the great offspring, the great scion, the great son." Emphasis here is similarly placed on the idea of sonship as we have found it above in regard to the Babylonian word *šarru*; and here in Egypt as there in Babylonia it must have been a sonship in relation to a divinity, probably at first it contained merely the view of adoption, but later it developed into the idea of actual divine birth, so that

in the very word pharaoh we have the root of the later doctrine of the divinity of kingship in Egypt. Who that god was to whom the king stood in relation of a "great offspring" is not a matter of conjecture; this is known. It was Horus. The name of the city of Hierakonpolis in Egyptian (i.e., *nkhn*)¹⁹ receives its light from that which we have elucidated so far. Hierakonpolis and the district about it where there originated the formation of the first strong civilized central government in Egypt, is called *nkhn*, that is, the city of the "child" in view of the fact that the king who resided there was the child, or the son of Horus. In a special sense, however, Edfu, which belonged also to the territory in which the beginnings of the later Egyptian kingdom took its origin, seems to have been the seat of the government and the royal capital, and therefore was called *bhd.t* which is derived from *bhdw* "throne." Edfu thus was the "throne-city" of the "great son," the Pharaoh, and from here as well as from Hierakonpolis the Egyptian kingship as we find it in historical times took its rise and its early development.

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¹⁹ The writer has substituted *kh* for *h* with the half-circle below for want of the latter diacritical mark in the printer's office.

SEX-RATIO IN AFRICAN PEOPLES

By L. W. G. MALCOLM

WITH A NOTE BY A. S. PARKES

THE original objects of the present communication were to make enquiries into (a) the extent and distribution of sex-ratios¹ of the tribes in West Africa and other parts of the continent, and (b) to ascertain what relationship these ratios bore to racial decline or otherwise. During the progress of the work it was found that the material available was not of such a nature as to give any definite results regarding the second purpose of the inquiry. Although there is a certain amount of data available for the estimation of the tertiary sex-ratio there is very little for the secondary or birth ratio. In no single instance is there any information concerning the primary sex-ratio.

As far as possible the ratios have been calculated with regard to tribal distribution, or by known districts.

Westermarck (63)² referring to the tribes of Africa says that we seldom hear of any people among whom the males outnumber the females. As regards the tribes of the West Coast of Africa, however, he says this is the case in the Kisama tribe of Angola (36), one of the few African tribes said to be monogamous. There is, he says, a greater preponderance of women over men among the tribes of the Congo (62), the Bube of Fernando Póo (7), the Kru of the Grain Coast (7), the negroes of the Gold Coast (4), at Ma Bung in the Temne Country (21), and in Southern Guinea (64).

The tertiary sex-ratios for tribes and districts in the various African areas are set forth, beginning with the Cameroon. In addition to my original observations, the works of Koch (20), Mansfeld (26), Passarge (33) and the *Ämtliche Jahresberichte*

¹ For the purposes of the present work the sex-ratio of conception is called primary, the sex-ratio of birth, secondary, and of adults, tertiary. (48) The true sex-ratio, of course, would be the ratio of reproductive males to reproductive females at the mean nuptial age for each sex.

² Numbers in parentheses refer to literature cited at end of paper.

für 1912, 1913 (46) have been consulted for the tribes and districts of the Cameroon.

CAMEROON

<i>Tribe</i>	<i>Masculinity^a</i>	<i>Tribe</i>	<i>Masculinity</i>
Abo	74(4492, 6069)	Duala	94(7885, 8310)
Anyang	80(2320, 3680)	E-banda	66(400, 600)
Babete	83(197, 238)	E-dsoa	50(150, 300)
Badyue	49(2063, 4194)	E-ghap	26(700, 2700)
Baka	82(199, 244)	E-koi	26(711, 2789)
Bakogo	67	E-koi	67
Bakoko	73(979, 1335)	Elingena	85(170, 200)
Bakoko	61(400, 650)	Engonkeng	30(150, 500)
Bakum	100(1200, 1200)	Engula	60(30, 50)
Bakwe	128(9, 7)	E-samba	78(470, 600)
Bakwiri	103(3259, 3162)	E-sun	60(1600, 2660)
Bali-Bagam	77(88, 114)	E-tun	85(20483, 24031)
Balom	100(250, 250)	Eva-nkun	93(700, 750)
Balundu	34(176, 524)	Fang	83(563, 702)
Balung	73(1045, 1425)	Fang	80(5141, 6236)
Bamendjinda	51(200, 392)	Fuh	87(700, 800)
Bamenyam	51(100, 198)	Gasho	73(59, 80)
Bamumkumbo	78(219, 280)	Hausawa	176(17, 9)
Bane	74(1256, 1705)	Iltong	88
Bane	74(9586, 13023)	Iyarra	94(333, 313)
Bangandu	67(567, 463)	Kabere	73(155, 210)
Banyang	70(5049, 7451)	Kaka	83(333, 400)
Bassa	73(678, 925)	Kaka	108(7000, 6500)
Batanga	86(1200, 1400)	Keaka	30(1402, 4598)
Bati	81(466, 576)	Keaka	82
Batti	100(70, 70)	Keperoe	100(500, 500)
Baya	90(9000, 10000)	Kunabembe	94(620, 661)
Beia	100(80, 80)	Lombo	105(401, 382)
Belle	116(3500, 3000)	Mabea	92(2877, 3119)
Besom	92(334, 362)	Maka	107(13000, 12200)
Biakum	79(162, 203)	Maka	125(750, 600)
Bidyuk	101(288, 284)	Makai	97(54, 55)
Bokari	100(189, 189)	Malun	75(106, 142)
Boki	57(470, 830)	Manka	60(755, 1245)
Boko	78	Mbelle	86(1190, 1390)
Bomam	67(88, 131)	Mbidambane	96(2500, 2600)
Bulu	83(2000, 2400)	Mensime	81(1300, 1600)
Bulu	80(21797, 27239)	Missanga	47(89, 191)
Bumbon	76(563, 657)	Moelle	(13812, 16291)
Dibamba	74(2588, 3502)	Mosetshe	92(56, 61)

^a The figures after the sex-ratio refer to the number of males and females from which the ratio has been calculated.

<i>Tribe</i>	<i>Masculinity</i>	<i>Tribe</i>	<i>Masculinity</i>
Msang	83(500, 600)	Sokie	90(125, 138)
Msong	78(2641, 3400)	Sso	87(33, 38)
Mungo	73(227, 310)	Sso	88(1100, 1256)
Mvelle	84	Tikar	100(2500, 2500)
Mwei	87(3500, 4000)	Vogsbalinga	82(471, 582)
Ndokama	73(228, 312)	Wai	81(627, 771)
Ndonga	73(646, 882)	Wogenyenge	93(2050, 2200)
Ndsimu	70(299, 422)	Wuri	73(1629, 2221)
Ngumba	80(4000, 5000)	Wute	81(6340, 7800)
Nsime	72(1268, 1753)	Yangelli	120(600, 500)
Ntum	93(7500, 8000)	Yangelli (Koch)	93(257, 277)
Nyanga	73(2313, 3154)	Yaunde	114(80, 70)
Nyanti	120(600, 500)	Yaunde	2(15,707,21, 736)
Nyem	87(547, 630)	Yebekolle	97(6200, 6400)
Nyem S.	78(334, 428)	Yebekanga	80(40, 50)
Obang	66(655, 1345)	Yekabba	55(1000, 1800)
Okangai	55(60, 110)	Yelinda	95(1950, 2050)
Omwang	83(1050, 1270)	Yembama	95(1651, 1802)
Omwang	87(3500, 4000)	Yemfog	94(267, 282)
Ovanyobbo	92(550, 600)	Yenakum	87(325, 375)
Pohl	100(500, 500)	Yengonne	92(1651, 1802)
Pongo	73(2192, 2994)	Yengula	120(425, 355)
Samabenye	128(160, 125)	Yenyok	84(160, 190)
Samedyang	101(107, 106)	Yetom	87(7, 8)
Sassum	79(297, 377)		

<i>District</i>	<i>Masculinity</i>
Bamenda	112(118665, 106079)
Banyo	115(12101, 10479)
Bare	75(6000, 8000)
Buea	88(3414, 3873)
Inkaduma	86(4632, 5343)
Joh. Albrechtshöhe	90(28500, 31500)
Kribi	81(11462, 14067)
Rio del Rey	60(11400, 19100)
Victoria	80(2373, 2957)

CONGO

For the Belgian Congo (44) the ratios are:

<i>District</i>	<i>Masculinity</i>	<i>District</i>	<i>Masculinity</i>
Bas-Congo	99(318, 321) ⁴	Kasäi	90(274, 354)
MoyenCongo	107(348, 326)	Lac Leopold II	90(303, 338)
Équateur	79(336-5, 425)	Bangala	92(304, 331)
Kwango	103(336, 327)	Aruwimi	102(330, 322)
Ubangi	78(326, 416)	Stanleyville	110(335, 305)
Lulonga	112(387, 344)	Lowa	100(333, 337)
SanKurn	97(336, 346)	Maniema	94(333, 355)

⁴ Proportions for 1000 of population.

<i>District</i>	<i>Masculinity</i>	<i>District</i>	<i>Masculinity</i>
Ituri	144(429, 298)	Lulua	101(336, 332)
Kiju	121(316, 260)	Lomami	79(306, 388)
Bas-Uele	89(325, 367)	Haut-Luapula	90(286.5, 315.5)
Haut-Uele	91(331, 362)	Tong-Moero.	85(332, 390)

The ratio for the whole territory is 96. In the following table the ratios for adults and non-adults from 1856 to 1917 are set forth.

Year	Adults	Non-adults
1856	93	121
1866	92	118
1880	90	118
1890	90	120
1900	90	119
1917	96	—

From the figures furnished by Harris (13) the following ratios have been estimated:

	<i>Masculinity</i>
Hinterland villages of the Kasai	76
Riverside villages of the Upper Congo	58
Riverside villages of the Upper Congo	76
Riverside villages of the Upper Congo	38
Hinterland villages, Upper Congo	45
Remote villages from the Upper Congo	61

In the Ubangi-Shari area (27) the ratios work out as follows:

<i>Division</i>	<i>Masculinity</i>	<i>Division</i>	<i>Masculinity</i>
Luesse	75(5724, 7632)	Alima	75(10386, 13849)
Buensa	75(100005, 13344)	Kuju	75(10419, 13892)
Bakuni	75(9363, 12487)	Mossaka-Bakota	75(9657, 12876)
Bakongo	82(25435, 30877)	Bokiba	75(1929, 2576)
Djue	82(10047, 12202)	Likuala	74(6039, 8052)
Pool	176(6245, 3552)	Ibenga-Motaba	75(5751, 7674)
Bateke	64(4200, 6600)		

Of the Batéke in the Congo, Westermarck says that "no disproportion of the sexes was observable."

NIGERIA

In 1882 the ratio at Lagos, in Southern Nigeria, was 116 (60). Mr. Palmer informs me that "the general experience in Nigeria is

that the most usual sex ratio is about 120 women to 100 men—among pagans.” Among the Agatu, a medley of tribes in the Bassa Province, Northern Nigeria, the women exceed the men in a proportion of three to two (53).

Among the Ibo-speaking tribes of Southern Nigeria (56) the ratio for the total population works out as follows:

<i>Town</i>	<i>Masculinity</i>
Aglo.....	129
Agolo Ododoma.....	116
Agolo Awka.....	32

For adults over twenty years of age for the same towns the ratios are 112, 89, and 74 respectively.

I am indebted to the Director, Medical and Sanitary Services, Lagos, Southern Nigeria for supplying me with data⁵ from which the following ratios have been calculated.

<i>Tribe</i>	<i>Masculinity</i>	
	Under 15 years of age	and over 15 years of age
Edo	106	89
Ibo	99	94
Ijan	97	87
Popo	102	103
Yoruba	97	86
Bafumbum-Bansan	112	94
Ekei	108	92
Ibibio	96	99
Other Semi-Bantu Tribes	99	87
Bantu	101	102
All natives	96	93

Togo

At Akposso (40) the ratio for 14 Plains Villages is 75, and for 10 Mountain Villages it is 68.

SIERRA LEONE

The ratio works out as 89 (35571,41000) in 1911, and 127 (47654,37599) as calculated from the census returns (47).

EAST AFRICA

Turning to East Africa it will be found that there is a preponderance of women over men in various areas, as in the Mang-

⁵ Proportions for 1000 of population.

bettu country (9209), among the Latuka (9225), the Konde (10), the WaGuha (63), and the Wataita (59). Among the Baganda the proportion varies from 3 to $3\frac{1}{2}$ women for each man (41), and among the Kavirondo the proportion is 3 to 4 women to each man (15). Among the Akikuyu the proportions are fairly equal (43). More exact figures are furnished by Van der Burgt for the Wassumbwa tribe (6). In 44 districts of the Ussambiro Sultanate the ratio in 1910 was 128 (2691,3441), and for 1913 it was 144 (2161,3111). Czekanowski (7) furnishes material for our purpose from Bukoba and the results are as follows:

<i>District</i>	<i>Masculinity</i>
Kiziba	54(7150, 14180)
Karagwe	85(8900, 10050)
Kyanja	73(10909, 14911)
Ihangiro	116(11156, 9610)
Kiamtwara	68(5520, 8050)
Bumbire Island	72(666, 918)
Bukoba	59(206, 348)

SOUTH AFRICA

As regards the tribes in South Africa there is a greater proportion of women than men among the Auin Bushmen of the Kalahari Desert (18), the Thonga (17), the Kimbunda (25), the Awemba (12), the Ba-Ila (51), and the Kaffirs (19, 22, 54). The ratio for the Basuto tribes is 88 (24). In the Southern Bantu tribes the women outnumber the men in the ratio of 106 to 100. (54). The ratio for the Bantu of the Cape of Good Hope is 88, for Natal 92, for the Transvaal 131, and for the Orange Free State 103 (52), or a general average of 103.5 for the Union of South Africa.

SOUTHWEST AFRICA

Turning to this area the information is somewhat more exact (46), and the ratios have been estimated as follow:

<i>Tribe</i>	<i>Masculinity</i>
Herero	75(7033, 9168)
Bergdamara	79(5765, 7230)
Nama	82(4420, 5353)
Bastards	93(971, 1047)
Bushmen	84(2102, 4286)
Becwana	109(142, 130)

At Lüderitzbucht the ratio for the Bushmen is 265 (28) and at Grootfontein for the years 1910, 1911, 1912, and 1913, they are 61, 47, 48, and 44 respectively (66).

EGYPT

From data, for which I have to thank the Statistical Department of the Egyptian Government, the following ratios were calculated:

<i>Years</i>	<i>Masculinity</i>
-1	104
1-5	96
5-10	100
10-20	117
20-40	92 ^a
40-60	100
60-	85

For purposes of comparison the figures given by Prinzing (37) for the German population have been worked on and the ratios are as follow:

<i>Years</i>	<i>Masculinity</i>
0-5	100.7
5-10	100.2
10-20	100.5
20-40	98.7
40-60	91.5
60-70	84.1
70-80	79.4
80-	64.7

For England and Wales Parkes (31) found that the secondary sex-ratio was 104, and for the first, second, third and fifth to tenth years of life the ratios were 102, 101.5, 100.3 and 99.9 respectively. The average of the first five years of life is 101. He finds that with the exception of slight rises between the years of fifteen and twenty, and forty and fifty there are changes in the sex-ratio with advancing years, a conclusion which supports that of Prinzing.

^a The statistics concerning deaths show that between the years 10-20, 20-40 and 40-60 "Diseases and Accidents of the Puerperium" were responsible for 10.9, 78.8 and 10.3 per cent of the total deaths of women.

Working on the degree of femininity von Baelz (2) determined the ratios of every 100 males to females in different countries as follow:

Great Britain	1070	Belgium	1015
Norway	1064	Italy	1010
Denmark	1058	Poland	995
Sweden	1049	Greece	986
Spain	1049	Japan	980
Austria	1035	India	960
Germany	1032	Bulgaria	959
Russia	1029	Servia	943
Switzerland	1029	Caucasus	901
Hungary	1024	Korea	885
France	1022	Russian Central Asia	851
Holland	1017	China	801
Ireland	1016		

An examination of the foregoing figures shows that as far as the African tribes are concerned there is a low degree of masculinity in the majority of cases, and that they are spread irregularly over a large area. The preponderance of females over males, in many instances, is due purely to artificial causes. The higher mortality of males through intertribal warfare, slavery, forced labor, etc., has helped to depopulate large tracts, especially in certain parts of West Africa (Congo).

The tertiary sex-ratio for the tribes and districts considered is 89.80. Rauber (39) says that the ratio for Africa is 103, but it is difficult to see how he could have arrived at this figure.

SECONDARY SEX-RATIO

As regards the secondary sex-ratio the information for the tribes in Africa is very scanty. In the Cameroon the ratios for the Keaka and Anyang tribes (26) work out as 84 and 61 respectively.

For the Ibo and Edo-speaking tribes of Southern Nigeria Thomas (55, 56) furnishes material for our present purpose. Regarding the former he says that the proportion of males to female births is 15 to 11, but taking the first-born only the proportion is 15 to 8. The following table shows the proportions of the sexes in a definite area.

Number of wives*	Agolo	Ododoma	Awka	Combined percentages
1	51.5/48.5	47/53	60/40	49/51
2	54/46	46/54	51/49	51/49
3	53/47	44/56	55/45	52/48
4	51/49	53/47	58/42	55/45
More than 4	57/43	57/43
Widows	54/46	57/43
Widowers	61/39

For the Edo-speaking tribes Thomas (55, 15) records that for the first-born in the present generation the proportions were seventy-nine males to fifty-five females, including those cases in which the children are still alive, and in the earlier generation the proportion was 47 males to 19 females. The total of the earlier generation was one hundred and three males and sixty females.

Turning to Togoland (40) the ratios are as follows:

Plains villages	96
Mountain villages	99
Fong villages	87
Kebu village	109

For the Timne-speaking peoples in the genealogies compiled by Thomas (57) there were 422 male births to 258 female, a ratio of 100 to 61; in the census returns there were 294 male births to 206 female, or a ratio of 100 to 69. As regards the sex-ratio of the first born the proportion of females for the wives and by families is as follows:

Number of Wives..	1	2	3	4	5	6
Genealogies.....	39	60	40	115	0	200
Families.....	43	44	54	60	55	21

Thomas points out that the general ratio, 46 females to 100 males "is markedly different from the ratio of all births."

For the Congo Harris (13) gives the figures for the estimation of this ratio as follows:

Five hinterland villages, Kasai.....	86
Riverside villages, Upper Congo....	116
Riverside villages, Upper Congo....	115
Remote villages, Upper Congo.....	116

In the East African region Peiper (34) records figures for Kilwa, and the ratio is 107. Felkin said there were more female than male births in Uganda, a statement which Roscoe confirms as far as the Baganda (41) and Banyoro (42) are concerned. For the Bantu Kavirondo, Ja-Luo, and Nandi, Hobley (16) records the following percentage of births.

	Males	Females
Bantu Kavirondo	57.5 %	42.5 %
Nilotic { Ja-Luo	42 %	58 %
Stock { Nandi	48.75%	51.25%

The ratio for Egypt is 108.

In Southwest Africa (46) the ratio for the various tribes works out as follows:

Herero	101
Bergdamara	95
Nama	102
Bastards	85
Bushmen	73
Becwana	90

Heape (14) found that for the negroes in Cuba the ratio was 97.71 for illegitimate births, and 107.73 for legitimate births. Wappaeus (61) records 98.53 for the blacks of Venezuela and Newcombe (29) 99.8 for the negroes of the United States. Little (23) records a ratio of 93.61 for first births, and one of 97.73 for subsequent births for colored matings in the United States.

For the African tribes, so far as one can gather from the available information, the birth ratio is somewhat lower than that of European countries. Parkes (32) has shown that the average birth-ratio for England and Wales for the period 1838-1914 is 104.1. Heape (14, 286) computed a four years average of twenty-nine countries and found it to be 105.6. The highest ratio was in Greece where 118 is recorded, a ratio comparable with those of the Jewish population of Prussia, Breslau, and Livonia, with ratios of 113, 114 and 120 respectively (8). According to Newcombe the ratio in Japan is practically the same as in European countries, but Nicholls (30) says that the ratio (104.7) is below the general average for the white race. Bugnion (5) gives the ratio as 104.6 for the years 1895-1905. India has a high

ratio of 1075, whilst the Mussulman population of Algeria return the ratio as 119. Nicholls found that the lowest ratios were given by the colored races in the United States with 1009.

As regards the changes in the birth-ratio due to unequal mortality of the sexes there is practically no information to hand for the African tribes. In Akposso (Togoland) the birth ratio was 96 for the Plains Villages, 87 for the Mountain Villages, 87 for the Fong Villages, and 109 for Kebu Village. The ratios of mortality (ages not given) are 147 to 148, 184 to 172, 47 to 54, and 72 males to 59 females respectively.

In Egypt the sex ratio of mortality during the first year of life is 122. This figure may be compared with those compiled by Prinzing (38) as follows:

Italy.....	111	England.....	121
Rumania.....	115	Sweden.....	121
France.....	119	Denmark.....	121
Austria.....	119	Norway.....	123
Switzerland.....		120	

For England and Wales Parkes found that the average ratio for the first year was 125. The ratio for the first five years of life in Egypt is 100; in England and Wales it is 118.4.

Westermarck (63, III, 176) quoting Felkin says that the proportion was 510 females to 100 males in the first births amongst the foreign women imported to Uganda, as compared with 102 females to 100 males in first births from pure Baganda women; while in subsequent pregnancies of the imported women the ratio was 137 females to 100 males.

There appears to be very little information at the present time as to how miscegenation affects the sex-ratio. Captain Pitt Rivers in a private communication considers that Westermarck's suggestion that mixture of race invariably produces an excess of females is not valid, and he says that it is his own contention "that it will only do so if miscegenation favours readaptation to changed conditions of life." Against this there is the recorded observation that more females are born as the result of mixed marriages in the Congo (63, III, 60). Torday records the same fact for the

children of Belgians and negro women in the Congo Belge, and Béranger-Féraud (3) for the Senegal.

Schultz (48) has shown that the primary sex-ratio becomes transformed by the unequal intrauterine mortality of the two sexes into a different sex-ratio.

Again Parkes (31) has recently discussed the question of the sex-ratios of colored races, and suggests that the sex-ratio tends to be lower than that of white races. In another work he refers to the matings of the same order, as monogynous with monogynous. This point was taken up by Thomas (58) who maintains that there is considerable variation within the color group, and he points out that social customs play a great part in the problem.

Pitt Rivers (35) finds that the secondary sex-ratio is not invariably constant within the ethnic groups. He says that within a group this ratio is not only influenced by ephemeral disturbing features in environmental conditions, it is also affected by factors producing the progressive decline of groups distinguished ethnically or otherwise.

The problem as to whether there is a higher proportion of male to female births in polygamous or monogamous marriages is uncertain, as far as the African tribes are concerned, owing to insufficient evidence. Thomas (57) says that the results obtained from the Timne-speaking peoples of Sierra Leone, and also from the tribes in Southern Nigeria suggest that polygyny favors an excess of male births; "but having regard to the small numbers and to the natural excess of male births in monogynous marriages—a condition which does not prevail in Nigeria—the result is less important than might appear at first sight." The ratios recorded in the present communication are based very often on small numbers, and, although there is a suggestion that there is a high variation within the ethnic group, more detailed information is required before any definite pronouncement can be made.

Pitt Rivers is of the opinion that "whenever a given population exhibits a progressive surplusage of adult men over adult women of reproductive age, that the progressive excess is concomitant with a corresponding decline in the crude population, and inversely, that a stable or increasing population exhibits a tendency

to produce a surplusage of mature women over men, we may legitimately assume that some correlation exists between the two sets of facts, and that a study of masculinity may help to elucidate population or racial tendencies."

The above statement does not altogether fit in with the observed facts as far as the native population of West Africa is concerned, for from personal observation among the tribes of the Grassland Area of the Western Cameroon it was noted that with an excess of females, and consequent polygynous marriages, there are decided signs of racial decline.

I have to thank Dr. A. S. Parkes for the following remarks on the material furnished in the present communication.

NOTE BY A. S. PARKES

The Tertiary Ratio. Recent work on genetics has shown fairly clearly that sex is determined not later than at conception, and this means that there is a sex-ratio at fertilisation, and right through foetal life, as well as later. In the absence of sex-reversal, changes in the sex-ratio between conception and senescence can only come about as the result of unequal mortality of the sexes, and this fact has been used, notably by Schultz, to estimate the primary ratio, which cannot be directly observed. During practically the whole life cycle there is an excess mortality of males in all cases where investigation has been possible. This means that there is a lower proportion of males at birth than at conception, and a lower proportion at maturity than at birth. During adult life this decreasing proportion of males is accentuated by the greater risks run by the male sex, and this is especially true of peoples living in less settled conditions, particularly uncivilised peoples.

The few data relating to the secondary ratio in the tribes under discussion in this paper make it clear that the great excess of females among adults is produced by a high masculinity of the mortality, but how far this high masculinity is due to inherent frailty of the males and how far to this greater exposure to dangers, it is difficult to say. It is possible, however, to approach this question by considering what is known of the sex-ratio during

infancy, when, excepting differential infanticide, there cannot be much difference in the relative risks run by the two sexes. In Europe the sex-ratio of infants of five years old is much below that of births and this correlates with the fact that the observed ratio of mortality between these times is 110 to 120. This shows that in Europe, at any rate, there is a tendency for males to succumb more readily, quite apart from risks due to occupation, etc. In England even the mortality attending maternity does not bring the female mortality up to the male.

In this connection the figures given above for Egypt are interesting. The sex-ratio for infancy shows the usual decline from that for the first year of life, showing that in this case also the males are the less tenacious of life. The rise in the ratio up to the 10-20 years age group is analogous to, though more striking than, the very slight rise found in England at this time, and in the latter case at least, this is due to the greater severity of the onset of puberty in the female sex as compared with the male. The Egyptian statistics show one thing very clearly, and that is that in spite of the fact that in the 20-40 years age group 78.8% of the female mortality is due to puerperal complaints, which afflict the female only, yet the sex-ratio during this time is low. The relative elimination of males must be very striking, unless a considerable amount of differential emigration takes place.

The chief point to be drawn from these statistics is that it is not only in white races that infantile mortality falls preponderatingly upon the males.

The Secondary Ratio. In practically all cases where it has been possible to get data it has been found that greater mortality of males also occurs before birth, and as pre-natal mortality is considerable under even the best conditions and enormous under bad conditions, there are obviously two factors governing the ratio at birth.

- (a) The sex-ratio at conception.
- (b) The amount and sex-incidence of pre-natal mortality.

In white races there seems to be an actual excess of males at conception, and the ratio at this time has been variously calculated by different authors to be between 110 and 120 males per 100

females. There is no reason to suppose that the ratio at conception is anything like constant. There is, in fact, good reason to suppose that it is not. It is of course impossible (as yet) to observe the ratio at conception and the estimations have to be founded on (a) the known amount of pre-natal mortality, (b) its sex incidence, and, (c) the observed ratio at birth. The source of any variation in the ratio at birth has to be sought, therefore, in a varying amount of pre-natal mortality, or in variation of the primary ratio at conception. General examples of each type of variation in the secondary ratio may be found elsewhere, but reference is made above to specific (i.e. between different tribes) variation, variation according to the degree of polygyny, variation according to the number of the birth (first, and subsequent, etc.), difference between illegitimate and legitimate births, and the possibility of relationship between high masculinity and race decline. As little or no data relative to pre-natal or even post-natal mortality seems to be available for the races in question any discussion can only be in general terms, but since the general phenomena of reproduction are probably not dissimilar to those existing elsewhere, an analysis from the standpoint of what is known about more easily accessible races may serve some useful purpose.

The most striking thing about the specific variation is that the ratios for aboriginal races do seem to be lower on the whole than those for European and white races generally. The difficulty of securing anything like comprehensive statistics for the former render this generalization provisional at the best, but I have elsewhere given some striking examples of white and colored races living in close proximity where the ratio for the colored is much lower. I am inclined to consider this deficiency of males to be due to a large amount of pre-natal mortality, which, as mentioned above, falls most heavily on the males. This hypothesis becomes more reasonable when it is remembered that some forms of sterility and semi-sterility, especially those following malnutrition⁷ (those to which aboriginal races are particularly liable) are due to the

⁷ "Malnutrition" is here used in its widest sense to include vitamin deficiency, ill-balanced diet, etc.

inability of the mother to bear a foetus to full-time, and that a male foetus is more difficult to bear to full-time than a female.

The statistics cited above which tend to show that polygyny raises the sex-ratio are quite in keeping with what has been found in other mammals. Many years ago it was shown that the proportion of males among horses increased with the amount of stud work allowed to a stallion, and lately I have found the same type of thing to exist for mice. The cause of this increase must be sought in the male, and there is this reason, as well as others, for thinking that increased sexual activity may alter the ratio between the X-spermatozoa (female-producing) and the Y-spermatozoa⁸ (male-producing) in favor of the latter, so that the primary ratio is slightly higher. It must be mentioned, however, that it has quite fairly been pointed out by Thomas that where promiscuity is to any degree pronounced, the custom of monogyny may be more theoretical than real, and may be no criterion of sexual activity.

In European races first births have a higher ratio than subsequent ones; but curiously enough, the few existing records relating to colored races suggest that in these latter the phenomena are reversed, and Thomas's data for the Timne-speaking people seem to support this conclusion. In the case of white races it is almost certain that the variation in the sex-ratio according to both the number of the pregnancy and the age of the mother (which of course are closely connected) is brought about by pre-natal mortality. It may be that this explanation also applies to colored races.

There is equally little doubt that in most cases the difference between the sex-ratios of legitimate and illegitimate births is accounted for by an increase in intrauterine mortality and a consequent increase in the prenatal wastage of males. In civilised races the efforts at concealment which often accompany illegitimate gestation must raise pre-natal mortality. In the less

⁸ It is impossible here to go into the chromosome mechanism of sex determination. It suffices to say that sex is determined by the male parent by virtue of dimorphic spermatozoa.

civilised races, however, this factor probably does not operate to the same extent, and I am inclined to think that the fact that in this case illegitimate conceptions are almost confined to the primitive breeding season, when the proportion of females rises, has the greater weight in moulding the low sex-ratio of illegitimate births.

Finally may be mentioned the question of the interrelation of race decline and high masculinity. In many cases the two are no doubt associated, but the real question lies in the analysis of cause and effect. Owing to the relative reproductive capacities of the two sexes, the number of fertile females is the limiting factor in the rate of increase of a race. For this reason a race to be reproductively vigorous has to have a reasonable proportion of females, and a tribe which is composed of, say, 500 males and 200 females will increase no more rapidly, other things being equal, than will one of 200 males and 200 females, or no more rapidly even than one of 100 males and 200 females. There is, I believe, little or no evidence that effeteness, as such, can produce any very startling change in the sex ratio at conception, and the whole tendency of bad conditions and bad ancestry after conception is to weed out the males and so increase the proportion of females. It is difficult to see, therefore, how a great excess of adult males over females can arise except as the result of some form of artificial selection such as female infanticide.

I am of the opinion, therefore, that any very great excess of males does not arise from natural causes, and that the excess is a contributory cause of, and not a concomitant result of, race decline. In this connection it is hard to avoid calling to mind the agricultural practice of exterminating rats by releasing all males caught alive. This has the effect of greatly altering the sex-ratio in favor of the males, with the result that the females are worried into a state approaching sterility.

In conclusion it may be said that the problems of the sex-ratio in the less known races seem to be of the same general type as those presented by white races, but that much more data relating to pregnancy and parturition is required before it will be possible to approach the subject in anything like an accurate manner.

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THE SUBDIVISIONS OF THE HUMAN RACE AND THEIR DISTRIBUTION

By T. T. WATERMAN

THE diffusion of human types is by no means so confusing, it seems to me, as many anthropological writers wish to make out. My own ideas on the subject are largely colored by reading a paper by W. D. Matthew, on *Climate and Evolution*, published some years ago by the New York Academy of Sciences. I regard his monograph as a remarkable paper from the anthropological standpoint, though it is not primarily concerned with human types. I should accordingly like to air my convictions concerning the races, ascribing to this previous writer most of the credit or discredit for the ideas involved. I merely add to what he says some reflections arising out of my own reading, by way of supplement or exegesis. Since the present effort promises to develop into a discourse of some length, I am dividing it into sections or heads, the first of which concerns the differences which exist between groups of people.

"RACIAL" DIFFERENCES

Few things are more conspicuous than the differences between the various folk who make up the world's population. An interminable catalog is easily made of them, specifying thousands of points in which the nations vary. Concerning these differences I may say that we have never determined which are hereditary, which are due to geographical influence, and which are simply the expression of slowly-developed group-ideas, or convictions, or habits. Rudyard Kipling is persuaded that east is east and west is west, and never the twain shall meet. Thus a European hand-saw (to help him out with a few examples) cuts on the *push*, while a Japanese saw goes down by gravity and cuts on the up-stroke or *pull*. Such differences seem to Kipling and to a host of scientific essayists to be the expression of something that is "different" within the "oriental" mind. Some of the differences in the

behavior of distant peoples seem not merely striking, but positively comical or startling, as when a Mincopie (I am told) smokes a cheroot by putting the lighted end in his mouth, breathing the smoke; or when a Tibetan cuts up his grandfather's remains with a chopping knife, in order to dispose of them. Most differences in behavior appear to me, and to most American anthropologists, to express not a difference in the Tibetan's head, or his inside workings, but in his training or culture. Certain it is however that some differences are inborn, not acquired, particularly certain bodily traits. Of these differences, long and exceedingly tiresome lists have been written out, the most recent ones being rather more prosy and interminable than the earlier ones.

THE SHAPE OF THE EARTH AS THE HOME OF MAN

It is not possible, I think, to sum up these differences, nor to see what they mean, without considering the earth as a whole, for the nature of the earth, its shape and configuration, has largely determined the distribution of man. Let us therefore turn at once to that topic, fleeing the enumeration of "racial" differences, as the righteous flee the wrath to come.

We are taught a number of propositions about the shape of the earth; namely that it is a ball, a sphere, an oblate spheroid, an ellipsoid of rotation, et cetera, none of which helps us to understand the distribution of anything. Our earth seems to me to have from the standpoint of the distribution of living creatures, something of the character of an inverted pyramid. It is by no means round like a ball, but four sided or tetrahedral (remembering that the *cube* has not four sides, but six). What we may regard as the top part of the earth is the portion surrounding the north pole. This "top" is an area roughly included within the thirtieth parallel of north latitude. An area of disturbance in a general way follows the zone between this thirtieth parallel and the tropic of Cancer, a zone which is marked by fissuring, cracking, faulting, subsidences, volcanoes, and the emergence of great mountain systems. I think it is useful to regard this north circumpolar area as a great platform, surrounded by subsidences like the Gulf of Mexico, the Mediterranean, and the Persian Gulf, alternating with chains

of mountains (the Rockies, the Pyrenees, the Alps, the Atlas, the Caucasus, the Himalayas). This northern platform is thus predominatingly *emerged* land, rimmed about with mountain systems and gulfs. The pole itself is isolated, but this circum-polar-platform is your home and mine and the home of all the highly civilized peoples; and it may be looked upon as a geographical unit.

The remainder of the land on earth consists for the most part of three great peninsulas raying off from the platform along three lines of disturbance in the earth's crust. These peninsulas we may call South America, southern Africa, and Australasia. Each of the peninsulas is inclosed within enormous bodies of water. They are not properly part of the central land mass, but very much to the contrary. They are merely hitched to it. The ordinary grammar school geographies are most misleading on this point. Long ago they abolished Europe as a continent, hitching it on to Asia and calling the combined land mass "Eurasia," a term which I have always despised as artificial and affected, besides being unsound and ill-chosen. There is no conceivable reason, ancient or modern, living or fossil, why northern *Africa* and North America should have been excluded from "Eurasia." There is only one continent, really, on the planet, and it surrounds the north pole. Palaeontologists call the area which I am speaking about, the Holarctic region. We might perhaps call our continent or platform "Holarctica," using this term to replace the names which have come into use in the geographies.

The earth then for our purpose is not a ball at all, but may be looked upon as the platform of Holarctica with three peninsulas hitched to it, raying out toward the rim of things. One of the peninsulas (Australasia) is interrupted, a fact which has had great influence on its faunas, its human population, and its history. If these ribs or peninsulas were equally spaced, the tetrahedral character of the world would be more striking than it is. The South American rib is considerably out of place, owing to I know not what crankiness in the material composing the crust of the planet.

The remaining land areas, that is, those outside of the central continent and its peninsulas, are interesting enough. Some are large, like the great mass of Antarctica; some are interesting, like the tiny island of Ascension which is said to be carried on the British Navy list as a ship; many are romantically beautiful, with all things in the way of historic, scenic, and biologic interest for

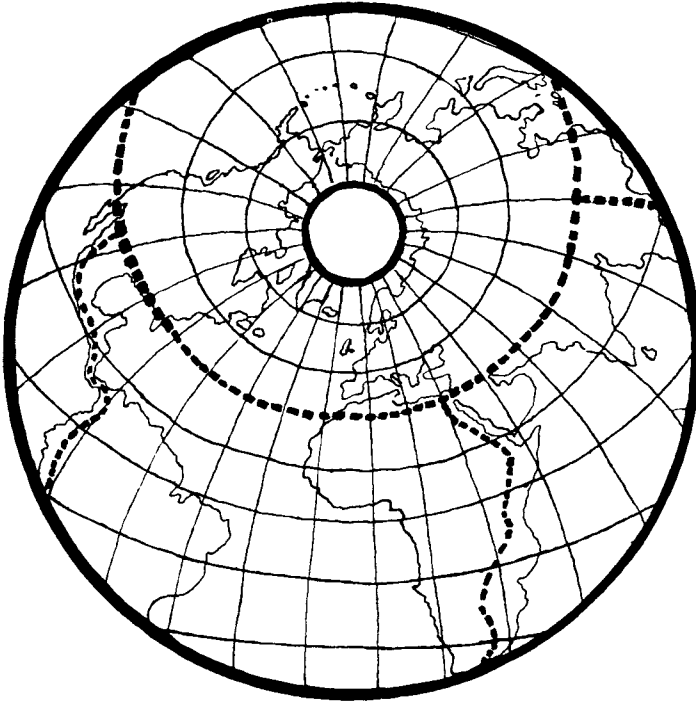


FIG. 1. The arrangement of land masses on the planet, showing by dotted lines the lines of disturbance in the earth's crust. The dotted lines indicate the principal axes of folding, of earthquakes, and volcanic action. The diagram is highly conventionalized, based on what is called the "twilight" map projection.

the student. But all these areas except the platform and its appendages lie outside of the main scene of evolution (fig. 1). We may recognize two main regions therefore; a central region or "platform" within the dotted circle, mostly land, and a peripheral region consisting of three great land ridges, isolated from each other, and merely tacked to the great continent at one end.

THE DISTRIBUTION OF TYPES OF PEOPLE

Two great groups or hordes of people inhabit the "central" land masses. One of these groups constitutes a fairly uniform type which we call Mongolian. Another is a highly variable type, which we like to think of as a unit, and which we call the Caucasian. An anthropologist may with some difficulty describe a Mongolian, but no living man I think can describe a Caucasian. All he can say is that Caucasians vary between absurdly wide limits. Whether we are one stock or ten is a debatable matter. At the present moment the most influential people in the one horde are the Chinese and Japanese with the Malay bringing up a close third. In the other horde, nations with a strain of blue-eyed heredity have the hegemony. These two hordes occupy all the platform, and have for some time been pushing outward into the marginal regions. By a curious accident, all of the so-called New World was isolated during the pleistocene epoch, by the presence of a great polar ice-sheet. None of the earlier forms of man ever penetrated the New World, which has been occupied only in very recent times. The first colonizers were Mongolians, the so-called American Indians, followed, after the year 1492, by Caucasians.

It seems to me that we can fairly watch through the pages of history the swelling of the two great hordes on the platform, and their consequent pushing out into the periphery. All the battles, migrations, and conquests which we know about, have had the general result of crowding the platform with these two types, and pushing their frontiers out into the marginal areas.

The outer zone, the margin of things, is occupied except as already indicated, by a type markedly different in some respects from the others, the Negro. The Negro peoples, in place of expanding, have for a very long time been losing ground. All Negro peoples are in process of being crowded into more and more restricted areas. Every presumption exists that they have been for long ages behaving in the same way, before any kind of direct record existed.

A striking thing in the distribution of the human race seems to me therefore to be this, that in Holarctica we find Caucasians and Mongolians. Outside of Holarctica, and there only in re-

stricted areas, we find Negroes. The next question is, can we find any reason for these facts of distribution.

REASONS FOR THIS DISTRIBUTION

I may say at the outset that the Negro looks to me like an earlier type than either of the others, and I suspect him very strongly of having evolved before the others did, and of having occupied at an early time not only Africa, New Guinea, and Australia, but the whole of the central land mass including Europe. I think there was a continuous distribution of Negroes over the whole of Europe and Asia; not over America, for the reason that they could not climb over the pleistocene ice-sheet to get here. The whole world was, in my mind's eye, peopled by Negroes at one time, except as they were prevented from spreading by ice barriers or seas. They are even yet notoriously poor sailors, and their ancestors must have been worse ones. The facts point strongly, it seems to me, to the conclusion that an early Negro type has been displaced in the central area, that the negro has been "chucked off" the platform bodily, by the Caucasian and Mongolian types. By this I do not mean that any certain Negro tribe has been expelled from the platform in historic times, or that any particular Negro has been chased over the mountain by any particular Chinaman or Swede. What I strongly suspect is that the Negro has been successful in propagating himself, as time has passed, only in areas further and further removed from the center. We know that this has been the case since the beginning of the great historic expansion following the rise of the present European nations. Thus the Negroes have lost Australia and a large part of South Africa. It seems almost equally clear that the same sort of thing has been happening since a very ancient period. In the Indian Ocean region and parts of the Pacific, there is evidence that Caucasians and Mongolians are recent arrivals, Negroes having been there first. This indicates or implies that the Negroes certainly are a more ancient and possibly a more primitive (i.e. a less developed) type. The evidence that the Negroes are more ancient in the Indian Ocean region than the other types, I should like to review briefly.

Hindustan. All authorities agree that the "original population" of India was darker than the present Hindus. The further we go southward in India the more numerous in the population are dark-skinned types. In extreme southern India, negroid traits are by no means unknown, though I know of no Negro *types*. That is, negroid traits become common in a population which is not essentially negro. In the island of Ceylon, off the southern shore of India, an aboriginal tribe called the Vedda, shows some real Negro individuals. They are not, to be sure, pure Negro in type, but they are obviously Negroes with some admixture of other blood. Finally, in the remote Andaman Islands in the Bay of Bengal, we find today a population that is simple Negro, pure and undefiled. They are the type known as Negrito (dwarf black) but have exaggerated Negro features, complexion, and hair. The simplest explanation seems to be this; that we are contemplating a region where Negro types have been submerged by successive waves of Caucasians, who have spilled over from the platform, *i.e.* from beyond the Himalayas. The proportion of black blood in Hindustan and its islands is almost directly proportional to the inaccessibility of the regions.

Malaysia. It is well known that in the whole East Indian area, interior regions are likely to be occupied by Negroes, even where the coast region is entirely occupied by Malays. Thus the island of Java, with forty million Malay Javanese, had in its interior an islet of blacks, known as the Kalangs. These Kalangs, as far as can be judged from their photographs, were as different from Malays as night is from day, having tremendously wide noses, conspicuous prognathism, and kinky hair. Even the Malay peninsula itself is the home of interior tribes which are not Mongolian in type, but Negro. Thus the Semang of that region are as Negro as any people could be (dwarf Negro, again). They are certainly more different from Malays, than the Malays are from us. The only way of visualizing the coming of Negro peoples into such positions as these, is to assume that they got there before anybody else did, and have since been crowded to the center by later arrivals; have been, in other words, displaced and hemmed in. The Kalangs, for example, could not have arrived in the interior of Java by flying over the heads of the forty million Malays, or over the heads of the five million who were there a century ago. That they could have pressed their way in, or fought their way in, or migrated in without losing their character by intermixture, is almost beyond imagining.

The Philippine Islands. In the Philippine archipelago, the distribution of black-skinned types has not the same diagrammatic simplicity. The blacks are there, in small numbers, but are not actually surrounded. Such black tribes as the Aeta are, however, in the most isolated regions. There is not the slightest doubt in the minds of the people who write about the Philippine region, that a Negrito population has been displaced by the Malays. Historical evidence shows clearly that the process has been continuous since the discovery. In the Philippines and Malaysia, therefore, we witness the displacement or submergence of Negro aborigines, not by Caucasians in this case, but by Mongolians. This has been going on for a very long time.

Australia and Tasmania. I do not know very much about the native bodily types of Australia. There is, no doubt, some divergence. Moreover,

the natives do not show a pure Negro type, as one would anticipate from their isolated habitat. Negro traits, however, are certainly common enough, though they are mixed in most individuals with traits which somehow seem foreign (heavy beards for example). There is no doubt I think that there was an original substratum that was Negro, of a very plain and uncompromising sort. This type still exists in places or individuals in some purity. I am not familiar enough with Australia to attempt the discussion of the distribution of types within that land. The little that is known about the natives of Tasmania indicates that they at least are (or were) not only pure Negro, but Negroes with the typical features exaggerated. This of course is what one would expect from the isolated and distant situation of their island. The data would seem to suggest an original distribution of Negro types, perhaps somewhat modified with later infusions of some other blood, the new blood dying out before it reached distant Tasmania.

New Guinea. I confess I cannot understand the existence of pure Negro types in the Island of Papua, or New Guinea. Nobody could find in the world more typical Negroes, or Negroes with less intermixture. Immigrant types seem to have passed around the island, for reasons which I cannot fathom. There must be something about the island which renders it less accessible to invasion. Why New Guinea should be the last area to admit Caucasian or Mongolian immigration, I do not know. I feel that New Guinea is an islet which shows today what was the original population, not only of Oceania, but of Africa and Europe and Asia.

It is thus my own feeling that the Negro got his bodily peculiarities, not in Africa (why people harp on Africa as the original home of the Negro is more than I can see) but in Asia or Europe (probably Asia), at a time when the climate was very different from what it is now. It is furthermore the sober truth that the oldest Negro remains of which we have any knowledge, were found not in Africa nor Australia, but north of the Mediterranean, at Grimaldi, near Mentone, in France. If we interpret the Negro as an early type, antecedent to the others, his position in comparison with the other races is rather easily understood. He possesses perhaps a less developed organization, and with it, some disabilities which rob him in the long run of any chance of success in competing with either of the other types; and so he has been pushed out of what was his original home. I feel sure that the Negro is older in Asia than in Australia or equatorial Africa; that he *came* from Asia to get to central Africa, or Australia.

I admit that I am arguing here from somewhat *a priori* grounds. I find the lower of the living types of animals in the marginal areas; and since I find the Negro in the marginal areas,

I am inclined perhaps to look upon him as lower. Since extinct forms of the lower living organisms, such as the marsupials, are found fossil in the rocks of Holarctica, search for the original type of man in Central Asia ought similarly to bring to light skulls of a Negro character. I may explain what I mean here.

What we call animals of low organization like the kangaroo and platypus, were once the highest animals in existence, and were particularly characteristic, not of the marginal areas, but of the central region. The land animals seem to have evolved in the central land masses, where the climatic shifts were very marked, and the changes very sharp and severe. Every such change descended like a ravening wolf on every existing form of life. Those forms which were able to quickly adapt themselves did so, but after doing so, were no longer quite the same, being higher in organization, more intelligent, and more resourceful. Those which did not succeed in becoming adapted, became extinct. Every new form, meanwhile, spread gradually outward into the marginal areas. The changes of surroundings which they encountered in migrating did not compare in severity with the changes they would have encountered *if they had stayed at home*. Often, indeed, the climate migrated with them. It seems to me that the history of the Negro, as far as we know it (which is not very far) is altogether too similar to the history of these lower forms of animal life to be the result of accident or coincidence. The Negro lives in the periphery because he is earlier and lower

MENTAL POSITION OF THE NEGRO

I certainly am not the first to hint that the Negro is a lower type than ourselves or the Mongolian. On this subject a great number of books have been written, pro and contra. I admit that the exact status of the Negro is hard to define. We have never set about defining it by scientific experiment until recently, and we still have insufficient data (not nearly enough data) to put the Negro into his proper niche. Some individual Negroes are clever, and a few of them have achieved real distinction in art (histrionic and otherwise). On the other hand, the dark-skinned types have in the long run allowed themselves to be pushed off the platform,

and even in the marginal areas and the peninsulas, they are being pushed aside into the most unfavorable parts. Whites have been passing for thousands of years into eastern Africa, and the pure Negro types appear now only in western Africa, on the whole a much less favorable region. Africa north of the Sudan has never been Negro since history began though I fancy it was Negro before that curtain rose. On the contrary, some of the greatest white nations have grown up, lived, and flourished there; for example, the Egyptians.

Questions of superiority and inferiority between races are of course much mooted, have been much mooted in the past, and will become more violently mooted than ever as the colored population of the United States becomes more articulate. I am free to admit, as a disinterested ethnologist, that our own negroes seem to be somewhat maligned. Whatever mental gulf exists between whites and Negroes, is not at all in proportion to the social gulf. In any case, our attitude toward the Negro is an unreasoning one, and in our treatment of the Negro we are painstakingly storing up trouble for ourselves and for them. Our position is founded on folk-lore and myth, not upon reason. For example, the Negroes seem to be singularly free from a disposition toward sex offenses, the very thing of which they are most commonly accused. I nevertheless feel that the Negro is inferior to us. I do not know how inferior he is, nor in what particular traits his inferiority lies. That has never been worked out. As to what his capabilities are, let some one else speak. Others are already speaking about it, declaiming about it, and vociferating about it. My own point of view, after considering the distribution of Negroes, is somewhat detached. The matter of the Negro's relative ability and mental equipment is for me a purely academic question. In the long run his character will not matter, for it is clear from history that, no matter if the Negroes are the wisest and the best of people, they are going to disappear in time from off the face of the earth, leaving it to the Mongolians and to us.

Viewing the Negro from this angle, imagining that he may be an older and more primitive type of man, his history becomes at once more intelligible. Consider the fact just suggested, that for

thousands of years the Caucasians and Mongolians have been pushing him out of his habitat. Consider the fact that no Negro group has ever (I think I am speaking advisedly) pushed its way anywhere, against any kind of opposition, except Negro opposition. Consider the reaction of the African Negroes throughout history, to different stimuli. Consider the fact that the Negro tribes of Africa have lived for thousands of years in immediate touch with an area where the alphabet was in use. To talk about the usefulness of the alphabet in this place is unnecessary. Every schoolboy can orate about it with conviction and with reason. The African Negroes have been for thousands of years fairly in touch with the region where the alphabet originated (that is, Egypt). What Negro tribes however have adopted alphabetic writing? Those, I think I am safe in saying, who have recently come under the influence of the Mohammedan religion. On the other hand, consider their reaction to tobacco. Sir Walter Raleigh introduced the use of tobacco into Europe in fifteen hundred and something, A.D. In a generation, the Negroes of Africa were smoking their heads off. Psychological tests, in their present state of evolution, are of remarkably little use, but, in the absence of satisfactory psychological methods, we can, it seems to me, safely say that there is something distinctly the matter with a folk who in five thousand years do not acquire an alphabet, but who appropriate a bad habit overnight. They seem to resist advancement. They seem to me to be an older evolutionary form, and from their distribution and history, a vanishing one.

If this should prove to be the case, the curious reflection follows that perhaps the original complexion of the human race may have been not white, but black.

If we assume that Africa was the home or "area of characterization" of the Negro, that the Negro evolved in Africa while Swedes were evolving in northern Europe, and Chinamen in Honan, there is no way, it seems to me, to explain how the Negroes got to Australia or Oceania. There is no apparent migration route which they could have followed. The distribution seems to me rather to suggest that the Negro evolved somewhere in Asia (possibly the dwarf Negroes or Negritos first in the list, followed

by the true Negroes); that they passed by gradual expansion into the marginal areas (but not into America, which was cut off by the ice); and that then began the expansion of the later and more highly developed types, Caucasian and Mongolian. These latter hordes, following the old lines of expansion from Asia, pressed forward and cut off some Negro groups from others; the African from the Oceanic Negroes, for example. In other words, the Negro is found in Africa for the same reason that lions are found there. To suppose that lions evolved in Africa is rather putting the cart before the horse. The big cats are almost certainly older in Europe than they are in Africa. Their remains are common enough in Europe, in the older formations. They now live however in Africa, where modern conditions are like the ancient conditions in the original home. It used to be the fashion to comment on the *African* appearance of Europe's Tertiary faunas. As Dr. Matthew very neatly said, we should rather note the *Tertiary* look of our modern African beasts. Lions, hyenas, hippos, rhinoceroses, elephants, are not African any more than they are European. They are Tertiary. They characterize modern Africa and ancient Europe. Time has passed in Europe, where the Tertiary has been succeeded by the Quaternary, the warm Pliocene by the cool and glaciated Pleistocene. Time has stood still in Africa, which is still in a former age climatically. Remote and backward Australia is early Tertiary, while Africa is late Tertiary. This, it seems to me, is an illuminating idea. When the Tertiary has completely disappeared, the Negro will have disappeared with it. He is not organized for the Quaternary.

MENTAL EQUIPMENT OF THE OTHER TYPES

Having now evolved the Negro from the ape, excluded him beyond the limits of Holarctica, and finally thrust him off the earth altogether, let us turn to the remainder of the human race. I have never been certain how many types there are besides the Negro. At least one other may be recognized, the opposite in many respects of the Negro. These are the Mongolians. Where the Negro is dark, the Mongolian is relatively light, some of them quite as light as we are (the better class Chinese, for example).

Where the Negro's hair is perfectly woolly, the Mongolian's is perfectly lank. Where the Negro's head is elongated (speaking of most Negroes) the Mongolian's is round (speaking of most Mongolians). The longest heads in the world are common among the Negroes, the roundest among the Mongolians. Our psychological tests may indicate that the Negro may be slow, but they certainly indicate, if they indicate anything that the Mongolian is as quick as anybody. Where the Negro has for thousands of years been relinquishing his hold on our planet, the Mongolians have been gradually tightening theirs. The story of Mongolian expansion is a romance for any lover of the picturesque, for often they have stormed into Europe, seeming in a fair way on more than one occasion to annex it bodily. Their extraordinary energy may be pictured when one remembers that in almost the same burst they were storming Peking in China and Kiev in Russia.

In these latter days another Mongolian group, the Malay, seem to be establishing themselves very firmly. Java is a center for what promises to be an enormous group, very prolific, very industrious, in a very fertile part of the world. The ancestors of this Malay group seem to have passed out into the oceanic regions from Asia, though I do not pretend to know their history. The distribution of types in the Pacific seems to indicate that they left to one side certain areas, like New Guinea, and Australia, where Negro groups were already in occupation, pressing out instead into the distant isles of the sea, which up to the time of their arrival had never been occupied. In passing through this area of Negro populations, the Malay apparently picked up a good deal of Negro blood. The mixture, if my idea is the true one, resulted in such types as the Polynesian and Melanesian. I never saw a type or a photograph from this part of the world, which could not be explained as some sort of a mixture of Malay and Negro. The region is being somewhat carefully worked, and there are undoubtedly people who are in a position to speak with some show of authority. Certain it is meanwhile that the Polynesians living closest to New Guinea, show the greatest similarity to the Papuans. In fact, all over the Pacific region, there seems to be a

somewhat regular gradation of complexions and other traits, the likeness to the Negroid type being distributed from a focus. Some talk there is of a Caucasian element, but considering the well known variability within the other two types named, the two alone would seem to be fully competent to produce all the complexions and features which are actually found, by various degrees of crossing. It is always in order, it seems to me, to explain a type or any other phenomenon by the simplest theory available. This Malayo-Polynesian group has spread itself three quarters of the way around the globe, from Madagascar in the Indian Ocean to Easter Island in the Pacific. The Malay division is a teeming, thriving group, with every prospect of success under modern conditions.

While the facts seem to hint at some sort of inferiority on the part of the Negro, there is little reason to assume that Mongolians such as the Malay are inferior in any sense. They are for the most part strong, enduring, patient, of vast ingenuity, perhaps the world's most persistent and vigorous group today, disputing the globe with the whites on equal terms, or better. Our only chance to displace any of the civilized Mongolian groups is to abandon our present standards, methods, and outlook, and acquire a new set of desires and aspirations. They seem moreover to be a very human and likable folk, on real acquaintance.

THE WHITE MAN'S PLACE

It is easy in this way to give some sort of an account of the Mongolians and the Negroes. To assign to ourselves a place in the scheme of things is a baffling and difficult undertaking. If the Swedes and other north Europeans are excepted, it is hard even to name our characteristics. The Swedish type, with its blue eyes and fair hair, is one of the greatest curiosities on the face of the earth. When one considers the human race as a whole throughout its history, it is curious to reflect that ninety and nine out of every hundred of us have had black eyes; namely the entire population of Asia, the whole population of Africa, the whole population of primitive America and Oceania, and seven eighths of the population of Europe. If we are asked what our head form is,

we have not any, but all forms at once. If we are asked for our stature, we exhibit all kinds of stature, from tall in Scotland to

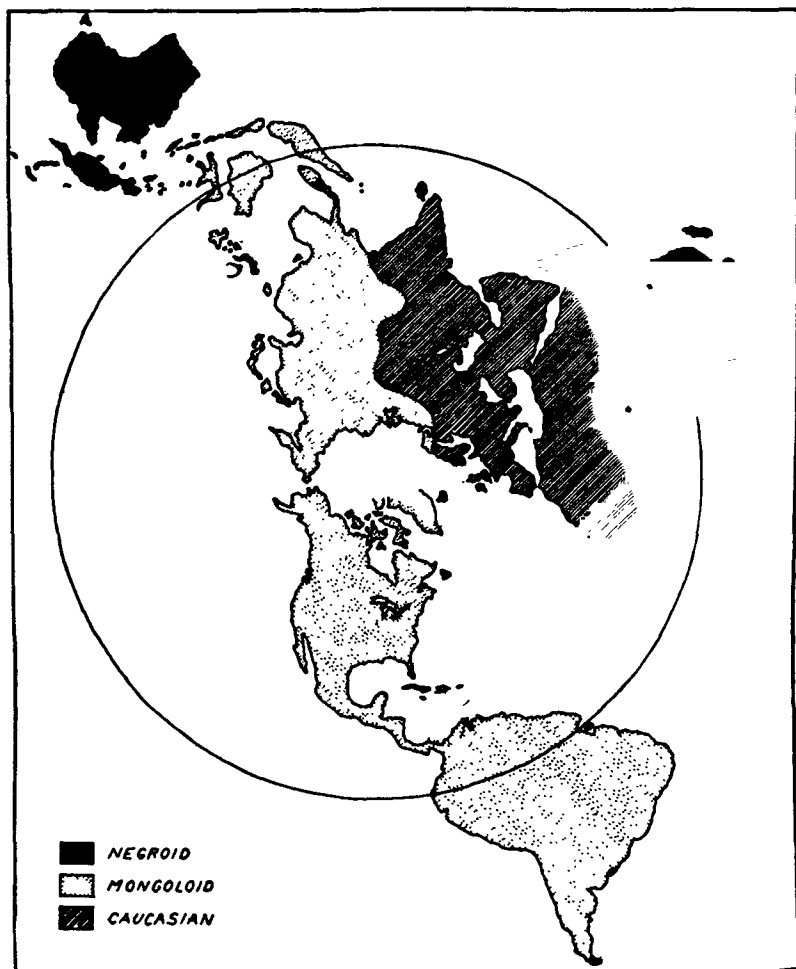


FIG. 2. Distribution of the Races of Man as this distribution would appear viewed from the North Pole. The circle is the equator, and the map is a highly artificial diagram, not a mathematical projection. It illustrates the crowding of the Negro into the peripheral regions. The *original* (American Indian) population of the New World appears in the map.

short in Italy. If complexion or eye color is asked for, we have nothing distinctive to offer, except that a small proportion

of us have blue eyes. The only thing I know of that really characterizes us, and makes us different from other types, is a peculiar physiognomy, a vertical profile with a high and narrow nose. The man (W. Z. Ripley) who has written the most frequently-quoted book on the races of Europe, a work of tremendous labor and vast erudition, hints that there is no European or Caucasian type, but three sub-types, two extracted out of a negroid base (the long-headed north and south Europeans) and one round-headed type, sprung out of Asia (?), and presumably derived from the Mongolian. It is an open question in my mind therefore (if Ripley cannot settle the matter, there is no reason why I should assume the responsibility) whether we are to consider that there are two great stocks, Negro and Mongolian, which by their crossing, in various degrees, have produced the bulk of European folk, and other mixed types like the Polynesian; *or* three types, two recent ones occupying the platform of Holarctica, plus a third, ancient, and somewhat backward stock, the Negro, long ago expelled from Holarctica into the outer regions. Out of compliment to ourselves, I have represented the latter condition on a map with which I accompany this article (figure 2). But I am none too sure that our existence as a separate stock could be demonstrated.

It must be observed that the accepted classification of the human race into five types means nothing. It is a further fact that the colors assigned to these five types are purely imaginary. We are all of us, "black" and "white," really brown. The Negro is not black, but chocolate (a fact which some artists have not discovered yet). The Chinese are not yellow, the Indian is not red, and the whites are by no means white, as anyone can see for himself by viewing his hand against a sheet of note paper. The actual pigment is a sepia-colored material known as melanin, which is the same in all races, the Negro's skin merely having a plentiful supply of it, while in the skin of the Swede there is a very scanty and much diffused charge. Such terms as black, and white, are convenient arbitrary catch-words, nothing more.

CONCLUSION

If the whites are to be recognized as a separate type, their claim in truth rests rather upon their history than upon their bodily peculiarities. Their original home was certainly in Holarctica, and from that home no type has ever been able to expel them. From the beginning of things, they have been wrangling and wrestling with the Mongolians, but always holding their own. They have never permanently lost ground. Not only that, but they have seized their full share of the outer areas, though they seem to be worrying more or less about their ability to retain all they have seized. Their first great historical excursion was into Hindustan. We may visualize their storming of the Himalayan barrier, and their onrush into India, as one of the great dramatic events of their story, though its dramatic character would have been lost to a witness in the deliberateness of the movement. It was nevertheless their first acquisition in the peripheral region. This was the first assault in their conquest of half a world. All the "battles" in history seem like cakes and fancy bread when viewed in the light of the age-long struggle between the types for existence, for standing room on the planet. I feel myself that the Negro, however, is "out of it" almost completely at the present time. He is an anachronism, like the kangaroo and the ornithorhynchus.

We ought to save out a few good Negro types before he becomes extinct.

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OJIBWA ETHNOLOGICAL CHIT-CHAT¹

By PAUL RADIN

INTRODUCTION

WHILE collecting data among the Eastern Ojibwa in Ontario in 1912-1916 the author made an attempt to obtain personal reminiscences from some of the older individuals comparable to those he had obtained among the Winnebago.² What he actually obtained was, however, something quite different, although just as important and interesting. The Indians approached either did not quite understand what the author desired or—it is far more likely—were not capable of writing autobiographical accounts of their lives. Instead they gave him what is essentially local gossip and chit-chat and numerous small bits of scattered ethnological information, most of which would have been extremely difficult to obtain otherwise. As to the value of such gossip and chit-chat no words are necessary. A picture of what must have been the normal life in an Ojibwa village fifty to one hundred years ago is presented. Every phase of their existence is represented, particularly the more intimate sides, their fears, jealousies, loves, the nature of their relation to the forest and the animals inhabiting it. Nor are humorous touches wanting. Those of us who have spent any length of time among the Indians know the enormous amount of tittle-tattle that goes on in any aboriginal settlement. It is a compound of such tittle-tattle, gossip, and chit-chat that will be found in the following records. It is quite significant that fundamental questions—the deeper aspects of religion and ceremonialism—are barely touched. In the main it is what Mary Ann told Susan Jane and, just as among ourselves, such talk conceals within itself all the tragedies and comedies of life.

¹ Published with permission of the Geological Survey of Canada.

² Personal Reminiscences of a Winnebago Indian, *Journal of American Folk-Lore*, xxvi, 1913; The Autobiography of a Winnebago Indian, *Univ. Cal. Pub. Am. Arch. Ethn.*, xvi, pp. 381-473.

The data were obtained in Ojibwa in a syllabary some of the Indians of Eastern Ontario use. It was translated into English by Mr. Edwin Maness of Sarnia, Ontario. It is given practically as translated. I have kept the order of the informant, except for the omission of the general accounts of customs, although this has meant a certain amount of disorder. However, I am reluctant to do anything that might remotely interfere with whatever personal touch may inhere in the account. I have not thought it necessary to give a table of contents for the ninety-one items. Part of the charm of the whole is its haphazard nature. Items one to eighty-two represent the data of B. W. and eighty-three to ninety-one of R. I., both living near Sarnia.

1.

Once Indians were out hunting in the winter time and while they were hunting it began to snow very much day after day. When the snow was about as high as a man's stomach, standing, one of the men got frightened and said, "It is quite hopeless. I am certain that a giant is about to come. Who will go out to meet him?" Then they spoke to one another. No one was willing. There was a little boy, however, an orphan, about ten years old and he said to his grandmother, "How big is the giant?" The woman answered, "Grandchild, he is very large. He is as tall as the trees. There is no one who can kill him and he will kill us all." Then the boy said, "I can kill him if you will do as I tell you." The men said, "We shall do as you order." "Good," said the boy, "make three conjuror's tents and also bring a new axe. Also prepare eight kettles of soup, four of which shall be held by brave warriors. When I have killed the giant I will come along with a war whoop and drink the eight kettles of soup."

After the conjuror-tents had been built the boy took off his leggings and threw one inside of one of the tents. This tent then began to move. Then he took off his shirt and threw it in one of the tents. Then that tent began to move. Finally he went in the last tent. After he had gone in the people outside heard them (boy and giant), giving the war whoop. Soon they heard the giant groaning. Then the boy came out giving a whoop. They

gave him the soup immediately and he drank all eight kettles. Then they were safe from the giants.

2.

The Indians living near Point Edward,³ at the rapids, sometimes played games. One of their commonest games was that of diving out into the lake. Many people used to come to see who would be the person to dive across. One day an old man said, "Is there anyone among you young men who could do it now?" One young man thereupon took off his clothes and dived into the lake. He emerged quite some distance out. Then he again dived and emerged far out, in a little lake (?).

2a.

One of the young men living among the people at the rapids took sick and told his parents, "I am not going to be well unless you put me out in a little lake for ten days. There I shall find a young man who will take care of me, one who never speaks to a woman; and around the lake there will be many men stationed to watch. Let no woman see me, for if one does I shall not come back."

Now in spite of the fact that there were many men keeping watch around the lake, two young women sneaked up to the lake and saw the young man. The young man sank down below the lake and soon a water-spirit rose out of the waters.

3.

Let me tell you another story about the Indians living near the rapids. Once there was a woman doing some washing out along the river. She took her little child, tied to a cradle-board, along with her. As she had to go up the hill to hang out some blankets which she was washing, she left the cradle-board and the child down at the foot of the hill. When she returned the child was gone. A *mide* was then asked to find out where the child was. The *mide* told them, "A lion (water-spirit) has stolen your child and it is out there in that cave." The people thereupon got angry

³ Near Sarnia, Ontario.

and said, "Tomorrow we shall go and kill him." So the next day they started, dug out the lion and killed him. They boiled the meat and the braves ate it, both men and women.

4.

Once a chief went out hunting and as he did not return by evening the Indians became alarmed and exclaimed, "Let us go and look for the one who has not returned for someone may have killed him." Thereupon they started out looking for him. As they were walking along they heard someone singing; the sound coming from the direction of the river. They immediately looked in that direction and saw a mass of grass and it was in that grass that the person was singing. They went nearer and soon noticed a person dancing. He was all bloody and an arrow was sticking in his side.

5.

Once an Indian was chased by the enemy and finally caught by four of them. He tried to fight them but was overpowered and almost killed. As he was being carried he was still conscious enough to realize that two people were holding him by the arms and two by the legs and that he was to be thrown into the river.⁴ So he wriggled and kicked and the men let him drop. They were afraid of him. However he was not able to do anything by himself, so he exclaimed, "I am killed, my brothers; won't you take me to the river?" So they took him there.

He told his son that he was to come within four days. The others then went home and told his sons that they were to go to the river within four days. When the time came they went there and found him sitting on the beach. He said, "My sons, I who was killed, do you take me by the hand so that I may walk." So they took him by the hand and he walked.

6.

Once two Indians were arrested and imprisoned. In the evening one of them said, "What shall we do?" And the other an-

⁴ Not quite clear. Apparently these people are friends who found him after the fight and thinking he was dead wanted to throw him into the river. But this would certainly not be a normal proceeding for the Ojibwa.

swered, "We can escape." When it was dark they made a hole with their teeth at the point in the wall from which they wished to escape. It was nearly light when they got out. One of them said, "Let there be fog!" And there was fog and they escaped.

7.

Once a woman was out gathering basswood bark and she felt positive a man was looking at her although she could not see him. This woman used to sing a song about her leg and stockings, so she took off her shoes and stockings and when she was finished, yelled and ran away. The man could not catch her and soon gave it up. After a while the woman got down on her legs and looked through them, to discover who the man was.⁵

8.

Once an Indian, when he found he had no way of walking through the deep snow, gathered some basswood bark, cut two small sticks and made a pair of snowshoes using strings of basswood bark. Then he tied on these snowshoes and ran along on the top of the snow until he arrived at his destination which was at a considerable distance.

9.

Once an old woman was left on one side of a river while others went across in their canoes. This woman was so busy picking huckleberries that she did not arrive at the shore until the others had left. She did not have any means of getting across the river but suddenly remembered that when she had been young she had dreamt (had a vision) of a flying squirrel. So she climbed a tree and when she reached the top of it she jumped toward the other side of the river.

10.

Once an Indian shouted, "A bad owl!" The others answered, "Be careful, he is challenging you!" Then the owl hooted. Again that Indian exclaimed, "A bad owl!" Soon it was just outside of the house that the owl was hooting. The Indian came out and sat

⁵ This is evidently an experience with the so-called "wild Indians," the bogey man who plays quite a part in the beliefs of the Ontario Ojibwa. Cf. footnote 8.

outside of the door. Then again he shouted, "Bad owl!" Then the owl hooted and came just opposite where the man was sitting and hooted. Again the man shouted. Then the owl hooted again.

11.

Once a man, toward evening, heard an owl hooting so he too hooted like an owl. The owl thereupon hooted again. This happened a few times. The people around him, said, "Don't make fun of him for he is likely to challenge you as to who is to stop first." The man thereupon said, "He isn't any good. Whom can he vanquish? I can vanquish that old owl!" Then the owl hooted and the man imitated him. This continued for some time.

It was after midnight and the man was getting sleepy and the owl likewise. The owl hooted again and then the man's hoot was heard faintly. "Wake up now for he will beat you," shouted the people. When it was about morning the owl hooted again, "Wake up now and hoot like an owl!" Then the man hooted like an owl and the owl died.

12.

Once an Indian was out hunting a raccoon. During the night he saw something shining. As he went along it got fainter until he could not see it any more. Nevertheless he decided to go over to where he thought it was when he had first noticed it. So he started in the direction in which he saw the light. He finally came to a place light enough to allow one to see. There he saw that it was a stone that was shining.

13.

As an Indian was walking through the woods he heard someone singing. So he stopped and waited for the singer to appear. But he could not see anyone although the singing person passed close to him. He did not see him and soon the voice died away. He wondered about the matter and went home. Arrived home he asked whom it was he had heard. "Why don't you know? It was a 'wild Indian' you heard. You will never be able to see him."

14.

Once an Indian who was a great drinker brought home a bottle. He never brought back anything else. His wife, at the time, didn't have anything to cook, so seeing the bottle she took it and boiled it in a pot and there it boiled quite a time. In the morning the woman said to her husband, "Get up now for that which you brought in is boiled." The man, seeing the bottle boiling in the pot, resolved never to drink again, and he didn't.

15.

Once an old man heard a manito saying, "I am you." There-upon another manito said, "He is telling a lie, for I am you. I have dwelled on the land with you." Then all those (manitos) in the lakes and in the caves answered him, saying, "He is telling the truth." Yet the manito in the skies said, "I am you; you belong to me, for I have created everything." Then only one manito answered. It was Nānebejo. Speaking from the west he said, "Go and tell the Indians what I have said and he who will not believe you, to him I shall send my fire. On the eighth day you are to start and you are to tell the Indians, 'I am come to tell you something. I have heard the great manito and he told me that those who do not believe, to them I shall send my fire.'" This is what the person was told. But the chief answered the black-bird (the messenger), "You are poor. He is not speaking to you, the great spirit. He is speaking to me for I am the chief and I will not believe what you say."

So he left and went to the other side of the river. Then he told those on the other side, "I have come to tell you something, for the great spirit has told me something." That chief also said, "You who are very poor, the manito would not speak to you and I don't believe you nor do my people either. Get out!" Then he left and went to the other end where his aunt lived. There he went. He said, "I have not come to ask for anything from you. I have come to tell you something." The old man said, "I won't listen to you." But the old woman, his aunt, said, "Good, nephew, tell me for I will listen to you." Then the old man said, "Let all the children who love me come here for I shall not listen to this

person." But the old woman said, "Let all those who love me come here for I am going to listen to what he has to say." So some went with the man, some with the woman. Then the blackbird said, "I heard the great spirit say 'praise me my children' and I praised him. Then he told me this, 'Go and tell them what I say and those who don't believe you, to those I shall send a little of my fire.' This is what he said."

Then he went home. When it was summer one heard that many Indians were dying. A terrible disease was raging and it was only Blackbird's aunt and some of her children who were not ill. The old man and some of his children died.

16.

An old man who used to go fishing in the river, as he was walking along its banks, heard someone crying up the river. He went on to see what it was and then he saw that a fox was coming toward him crying, "They are killing each other," said the fox, "and they are not even related to me."⁶ Then the old man went home and at his home he was met by his wife who ran out to him and told him that the people were killing each other.

17.

Once an old man said to his children, "In two days time he is going to pass, the white animal (*wa''bo-es'ê'*).⁷" The children were very glad that they were going to see this animal and one of them asked his father, "Father, is this the one who brings the morning?" And the father answered, "Yes. After a while you will hear him coming along and singing." Within two days' time he told his children, "Today you will hear him just before dawn. He is coming now." "*Awihî hi*, *awihî hi*," Thus he passed along toward the west singing, and it was morning.

18.

Once an old man was lost. It was during the winter time and he had been hunting. He could not find his horse. He fired off his gun as a signal but no one heard it. He heard no sound. Then he

⁶ I.e., I am not their to em. The passage, however, is not clear.

tried the same in another place. Then when the ground was all covered with snow he thought he would lie down on the bare snow and go to sleep. He said to himself, "Here I shall die." So he fell asleep. Then he dreamt of a man covering himself with a blanket and when he awoke he was not cold, but felt very warm, for it had snowed very hard and he was under the snow and his feet were warm.

19.

Once an old man said, "I am going to make a doll resembling a man." So he started out to look for a bullrush and when he had found it he started to transform this bullrush into a doll. Then when it was finished he took some medicine and blew it upon the doll and told his friends to come and see the doll he had made. "Now I'm going to make him dance." So the people came over. Then the man sang and shook the rattle and the doll danced. The Indians were afraid of this old man. Then he took his medicine bag, extracted some medicine from it and blew it upon the doll he had made. Then he sang again and shook his rattle and the doll danced again. Then he took some medicine and blew it upon the medicine bag and sang and shook his rattle and the medicine bag ran over to where the people were watching everything. Then he took off his mocassins and blew medicine upon his feet and his hands. Then he sang and started to dance toward the fire. When he got there he grabbed some red-hot coals and bit off pieces and yet did not get hurt. The people who watched him were very much afraid of him.

20.

This Indian was a great hunter. There was no one who could surpass him. He employed lead bullets. He always went after the lead himself in the autumn. He got just enough for himself. His bullets were very good; they always went straight. He never gave any of them away. If he happened to use up his supply before he stopped hunting he would go after some more. He never allowed anyone to go with him. It used to take him a day to go after the lead.

21.

Once, in the evening, when the young people were swimming in the river after sunset a person came along and said, "You had better stop now, for otherwise one of those who live in the water might come and live with you. Panabe's is what they are called (Lilliputians with long hair)." However, some of the young people would not stop; some stayed in the water. There was a tree slanting toward the water from which they used to jump in order to dive into the river. Soon the little man came. He climbed on the tree and then jumped into the river and all those who were still in the water rushed to the bank.

22.

One fall when an Indian was out hunting a great thunder-storm overtook him. The day after the storm he also went out to hunt. That night there was another thunder storm. Indeed, he used to hear how the thunder spirits tried to kill something. The next morning he thought he would go out and see what it was (the thunder was trying to kill). He went out and he saw something shining. "That must be what they were after," he thought. So he came to the place where the shining object lay. It was a big stone. He went around to see the stone. It shone brilliantly. It looked to him like gold, this stone did—so he collected the pieces that had been broken off and took them home. He told the other Indians what he had found but they did not know what it was. Then he took some and showed it to a white man, saying, "I have brought this to show you." The white man said, "This is gold. Where did you find it?" The Indian replied, "Over there where I was hunting." Then the white man said, "Take it to the town." He did so and they weighed it and it was worth \$50. This money was given to him and the rich people in the town said, "Take us out and show us the place. We will give you \$10,000." The Indian accepted it and the next morning they went to the place where he had found it and slept there. The following morning they went on to the place.

23.

Once an Indian went out hunting with his wife. They stopped at a place and made a little tent. In that neighborhood the man hunted. One day as he was going hunting, just as he was leaving the tent, he heard his wife scream. He turned back immediately but he heard no other shriek. Arrived at the tent he saw a lion, lying down like a cat, throwing the woman up in the air and catching her. He killed the lion and after he had buried his wife he returned home.

24.

Once an Indian got lost in the woods hunting and, when he did not return after a time, people went to look for him. It was winter at the time. They tracked him from place to place. Finally they found a place where he had broken through the ice and had fallen into the lake. Then they gave up the search and went home. They told the man's wife that they had discovered the place where he had been drowned. They no longer waited for him to return. What they did however was to give him his clothes by throwing them into the fire.

Now the man who had broken through the ice, had been siezed by a lion who had taken him home with him. That's where he was staying in the winter. He ate together with the lion.

The woman whose husband had been drowned married again. In the early spring the lion told the man who had broken through the ice, "It is spring now. Tomorrow you may go home. However, do not be put out about the fact that your wife has been married again. You can go home to your parents. I hope you will some time think of me for I had compassion for you when you broke through the ice." The lion thereupon told his children, "Take this man to the surface of the water." This they did. Then the man went to the house of his father. These old people had been very lonely and here suddenly their son entered. They embraced him. Soon every one knew that their son was home, the man who had fallen through the ice. All the people came and shook hands with him. The following morning they all

came to listen to his story, to what had happened to him after he had broken through the ice.

"When I broke through the ice the lion grabbed me. Then he took me to his home and there I stayed and ate with them whenever they ate. After a time the lion told me that I might go home and that perhaps I would help him some day when he was in trouble. He then told his children to take me up." After they had heard the story they all left.

25.

Once when an Indian went hunting he met a bear. He shot at it but he missed it. Then the bear became angry. He walked up to the man and the man got frightened. The man shot at him and again he missed him. Then the bear came up even closer to the man. This time, however, the man did not shoot but he struck him with his gun. Then the bear grabbed him and the man dropped his gun. They seized each other. The bear, however, had no chance to bite the man and the latter stabbed him with his knife and killed him.

26.

Once a man was out hunting and saw a buck-deer at which he shot, only wounding it however. He then put down his gun thinking he would kill it by striking it on the head with his little axe. So he struck at it with his axe but missed it and the buck then charged upon him. The man grabbed the buck by the horns but the buck shook him off and threw him to the ground. The man then decided to jump on the buck's back. He did so, straddling the animal. But his weight was not sufficient to bear the animal down. The deer then started running. Another man then ran for the gun and then seeing the buck running along with the first man on its back, fired at it and killed the animal. "Thank you for killing the deer," said the man, "for had you not done it he would certainly have killed me."

27.

Once in the fall an Indian went into the bushes to hunt. One day after it had snowed somewhat he tracked a raccoon. He followed it and came to a place where the raccoon had evidently climbed

an elm. The Indian then cut down another tree in such a way that it would fall against the tree in which the raccoon was concealed and thus enable him to climb the elm. However after he had bored a hole in the elm, the tree he had used in climbing fell to the ground and he was left in the other one. There remained nothing for him to do but stay there overnight. In the morning he shouted and the people hearing him came to the place. He told them to bring a rope. This they did and returning threw it to him and he tied it to a limb of the tree and lowered himself. "Never again shall I track a raccoon, never again climb a tree." Then he went home carrying the raccoon on his back.

At the place where he left his gun he found not his own but another one, very old and ugly.⁷ A "wild Indian" had come and exchanged it for his own. The Indian felt very badly about it although the gun he had received in exchange was very good for hunting. He had been told by every one not to worry but to take the gun he found. Yet he preferred to have his own. One day as he was going by the place where he had lost his own gun he saw a man. This man spoke to him and said, "Did you feel badly about the exchange of guns which I made?" The Indian got angry and walking over to him said, "Do you ask whether I felt angry?" Then he struck him with his fist but he didn't hit anything. All he knew was that someone was hitting him. He got the worst of it.

Then he went home and upon his return was asked, "What has happened to you?" He answered, "I went to the place where I lost my gun and there I found a man standing at the side of a tree who said to me, 'Are you feeling badly because I traded my gun for yours?' Then I struck him with my fist, but I didn't hit anything. All I know was that I was being hit." Then the others said to him, "You are a bad one. Didn't you know that you shouldn't hit a 'wild Indian.' " After that this Indian could never hit anything when he went hunting. His gun was no good. The Indian felt sorry that he had fought with the "wild Indian." Though he took his gun and placed it where they had fought the "wild Indian" never took it back.

⁷ Apparently two incidents have been run together.

One day while he was out hunting he met him again. On seeing him he said, "Good day," and he was answered, "Good day, my friend." Then the "wild Indian" said, "Will you not lend me some of your bullets?" and the man replied, "I have very few but here is a handful." Then the "wild Indian" was very much pleased and said, "Thank you, my friend, I'll give you my deer." Thereupon they shook hands and bade each other good-bye.⁸

28.

Once an Indian wanted to get a red-coat for an individual and he went across the lake and got the coat. The man who would wear this coat, as well as all of his followers, would never be killed. He would bring back all the people he took along (on the warpath). This Indian had ten men along with him who were brave and who led good lives. The name of the man with the red coat was Kijigáko.

29.

An Indian lived with his relatives in the country. When it used to rain very hard they would at times turn to him and say, "Look how hard it is raining! We're all getting wet." Then the man would say, "Clouds, don't come this way. You can pour on that side and also on that side beyond." So he said dividing the cloud. And really the cloud broke in two and in the center where they were staying the sky was clear until all the clouds had passed. Then they came together again.

30.

Once an Indian was attacked by a buffalo. He ran for all he was worth but began to get tired after awhile. Then he had to walk and when he had been walking for some time, he jumped into a little lake and dived down. The buffalo while chasing the Indian

⁸ Note of informant. Wild Indians are supposed to be people never seen but whose axe is often heard. Wherever wild squash, pumpkins, and potatoes are piled up in a heap one knows that they have been gathering their food. Indians when going through the woods often feel that some one is looking at them whom they themselves can't see. These are wild Indians.

had transformed himself into an Indian. Now (after the man had jumped into the lake) the buffalo went back into the woods, cut himself a spear and brought a canoe with him. He got into it and then speared the first Indian until he killed him.

31.

Once a man climbed a tree to kill a raccoon. When he got to the place where the raccoon was, he saw in looking down below, an enemy. This person had walked around the tree as the man was ascending it and was now waiting for him to descend and then kill him. The man accordingly jumped on to a tree standing nearby—and then jumped from tree to tree until he was some distance from the tree which he had climbed. Then he descended and ran away. The enemy, noticing that he was not on the tree he was watching, ran on and finally found the place where he had gone down. He chased him but he couldn't catch him.

32.

A woman while cleaning fish near the river saw men coming down in a canoe, so she hid in the water and they did not see her. After they had passed her she came to the shore and ran home to tell her people that she had seen the enemy. Then the men came out to watch for them. They danced all night until morning but the enemy did not return again. They conjured to find out who they were but they did not succeed.

33.

Once a woman, while picking blueberries, heard some one groaning in the tall grass. So she went home and told her people that there was some one in the tall grass who was sick. Then the men went over to see who it was. When they came near to the place they heard the groaning again. They came up closer and saw that it was a bear who had a toothache and the men would not harm the bear.

34.

Once while a man was out hunting he saw something on a little tree. It seemed to fall down in drops. He did not know what the

material was so he tasted it and found that it was maple-sugar. The tree had a black bark. Then the man went home and told the people that he had found a tree from which they could make sugar. So they all went over there to look at it. They collected the sap and mixed it with a medicine to make a cough medicine of it.

35.

Once an Indian saw a flame of fire passing by and when it was out of sight he heard an explosion. He ran and saw a big stone that had fallen from somewhere. He went home and told his people about it and they all came and they saw that it had really fallen (from the sky).

36.

Once an Indian made a hanging wigwam in which his son was to fast. He erected it in a tree in order that the boy should stay in one place and not wander around. Then the young man began to fast. After he had fasted many days he became hungry and thought that it was about time for him to stop, but his parents would not let him. Then the boy became very thin and wished to remain there all the time and eat nothing. In the morning when his parents went over to see him he was gone. The father wondered what had happened to him and went to an old conjuror to ask him if he could do anything. "I have come to ask you whether you could tell me what has happened to my son. One morning when I went to look for him he was gone." "You will never see him again," said the latter, "he was too light and when a strong breeze arose it blew him away."

Then the man went home and told his wife and she said, "Cannot this old man, the conjuror, go after him?" They then went over to ask him if he would be able to get their son and the old man answered, "There is no one who can go after him. He has become too light and if any one goes close to the place where your son is he will blow away again. Any wind that is blowing will blow him away. You will be able to hear him when he is passing. I will tell you what you can do. You must collect a large quantity of grease and when you hear him coming you must put that grease into the fire immediately, so that he can smell it. If he smells it he

will alight on a limb. When you see him alight on the limb go right on pouring grease on the fire. Then make some kind of a bed below the tree on which you wish him to alight. Then hide yourselves."

So the parents went home and started to collect the grease and prepare the bed. They were ready at all times, night and day. One night they heard him coming, so they poured grease into the fire. The *pagak* (their son) smelt the grease and alighted on the limb of a tree. They kept on pouring grease into the fire. Then their son fell to the ground. They picked him up and laid him on the bed and gave him some soup to drink. Then the *pagak* began to talk.

37.

One day when an Indian was out hunting he was caught by a large bird and carried away. This Indian had his spear with him. When the bird arrived at the place where the other birds were, it stretched its legs out so that it could pound the man on the rocks. Then the man speared it in the throat and the bird did not smash him but dropped him down to where the other birds were. These birds were afraid of him. Then he climbed down from the rock and went towards his home. He walked for many days until he came to some Indians whom he did not understand. He then walked on and passed across many rivers. One day as he was walking along he heard the voices of children who were playing. He understood the language in which the parents spoke to the children. They were his people.

38.

An Indian was once making maple sugar in the spring. One day his fellow Indians who had never made any sugar before came to him. He gave them some of his sugar and some of his syrup. Then the visitors left. They went back only a short distance and then pitched their tent. In the evening one of them went to the sugar-maker and traded some sugar for a mink he had killed. Then the man left again with the syrup he had bought. Suddenly he was heard yelling and the sugar-maker said to himself, "Surely

this is not making him drunk!" Shortly the man came again and brought some more mink hides saying, "I have come to buy some more." The maker gave him all he had and he left and was, soon after, heard yelling again. Although he had taken all the syrup the maker possessed he soon returned again with more mink hides and said, "I have come to buy some more." The sugar-maker gave him some of that which was starting to boil in the kettle. Then again the man left and soon was heard yelling again. When he got home and the people tasted it they said, "I believe he's mixed some water with this." They did not go to him any more. The sugar-maker however, had obtained many mink hides.

39.

Once a man heard a flying squirrel. He looked for it to make certain it was a squirrel. Then he went back and told his friends and they went back and brought a gun. When they arrived where the squirrel was they heard it again and one of them thereupon shot at it. Soon blood was seen to drip down.

40.

Once a man made a bag and he drew the image of his totem upon it. Then whenever he went out hunting those who had the same totem would give him some tobacco, for they were all one, those who had the same totem. They used to think very much about⁹ a *kako'n*¹⁰ and once every year they gave a feast and they would eat this animal. An image of it would be made and this would be painted in three colors. This image would then be placed in the center of the lodge where they were eating. All the chiefs and the brave men, all with their wives, sat down to eat. The head-chief then gave a speech and after it he served all the men and women and they all ate the animal.

41.

Once a man was living with his daughter and one day she said to him, "Do you know what is going to happen to you?" He

⁹ I.e. reverence.

¹⁰ An animal of unknown species.

answered, "No, what is going to happen to me?" "One day when you go out to cut wood you are going to kill yourself with your axe. Your axe will bounce off a tree, strike you, and kill you." One day, in winter he went out to cut some wood. It was very cold. As he was cutting some wood his axe bounced off, fell on his head, and killed him.

42.

There was once an Indian who was ill-treated by his fellow-men. This man possessed no medicine for he had never fasted. The others all mistreated him because he did not know anything. Everybody made fun of him. So an old man asked this Indian to come and see him secretly. When he had arrived the old man said, "Don't you have any medicine at all?" And the man answered, "No, I did not even fast when I was young." "Don't you feel badly when the Indians make fun of you?" "Yes, indeed, but I knew I couldn't do anything when I possessed no power." Then the old man said again, "Soon a medicine dance is to take place. Before it takes place come here secretly. Don't tell anyone about it. I am going to help you. The Indians are making altogether too much fun of you."

When the medicine dance was about to take place this man went to the old man and the latter said, "Come and eat and do every thing I tell you. Here is the medicine you are to use when the feast is given. Don't tie one of your shoes; keep it open. Blow this medicine upon it. When it is your turn to dance, do so, and when you have returned to the place from which you started, kick off your shoe in the direction where the stick is standing and then you must say, 'An owl, let this be an owl!' and your shoe will turn into an owl and as such alight on the stick."

When therefore the day for giving the dance arrived all the Indians came, those who were to take part and those who were merely to watch. All the great *mide* went into the *mide* structure. A pole stood in the center of it. Dancing began. One of the dancers danced around the lodge and when he returned from the place he had started he threw his belt on the ground and said, "Let this be a snake" and behold a snake crawled out. The

people inside the lodge then noticed the man of whom they had always made fun and at whom they always laughed and said, "He does not know anything. Why is he here?" All the *mide* performed wonderful deeds. Then suddenly the man at whom they were jeering got up and danced around the lodge. When he returned to the starting-point he kicked off his shoe in the direction of the stick and said, "Let this be an owl!" and behold an owl flew off and perched on the pole, hooting. Then the shoe fell to the ground. After that no one ever made fun of the young man again.

43.

Once an Indian stole something from his fellow Indians. About summer-time they decided to kill him. He knew what was going to happen and spoke to them, "What have I done to you that you wish to kill me? Well, good, take me out and tie me to a tree and shoot at me." He was accordingly taken there and shot. Suddenly they heard him give the war whoop and they went over to the place and found that he was not hurt at all, nor could they find the shots. Again they shot him and again he gave the war whoop and again they ran over to see him. They found him unwounded. "Well, now untie me," he said, "for if you don't I shall kill all of you." They untied him for they were afraid of him.

44.

Once when an Indian was out hunting he heard a wolf barking. He ran away and ascended a straight and very high tree he found. He climbed up before the wolves arrived. One of them immediately began to climb the tree. When it came to the place where the man was the latter struck at it with his axe. He hit it on the head and killed it. Then the wolf fell to the ground. In this way he killed all of them.

45.

Once when an Indian was out hunting he saw a turkey and chased it. When he caught up to it he kicked it on the tail feathers and said, "I am catching you." However, the Indian broke his

foot when he kicked the turkey and he could not walk home. He had to stay there until the next morning.

46.

Once a young woman was captured by the enemy. She was taken along with them, for her people were not strong enough to go in pursuit. The parents of the girl were very angry and they wept very much. The girl had a younger brother. He did not cry and he was frightfully angry when he saw his parents crying.

He asked some people to go along with him in pursuit of the enemy, but no one would go with him. This made him all the more angry. Then he told his parents, "Don't cry. I will go in pursuit of my older sister!" The parents spoke to him, "Don't go, son, for these people are very powerful." But the young man answered, "I love my sister too much (not to go); I have to go." He took off his clothes and tied a cloth round his loins. He took his axe and sharpened it. Then giving the war whoop he started off, although it was already two days since his sister had been carried off. He saw the place where the enemy had camped the first day. On the following day he caught up with them. He heard some of them chopping wood and finally he saw his sister carrying wood. He approached carefully to the place where the wood was being cut. When he got there he transformed himself into a weasel. There he saw his sister crying. Then he spoke to her, "Sister don't cry for I am here." Then the girl looked around and saw her brother. Then the brother asked, "Why are the sticks placed like that near the fire where you have slept?" And the young woman answered, "They are placed there after they have had a dance. When they go to sleep, I tie their legs to the sticks so that they may keep warm." Then the young man told his sister, "This evening when you tie their legs to the sticks, tie them tightly and keep a small axe near the place where you are sleeping. You will know I am coming by my war-whoop. I will kill all of them."

That night the young woman did not sleep and just at day-break she heard her brother coming. She arose and began hitting the people on the head leaving only one alive. This one they tied

up securely and took home with them. When they were near their home the young man gave the war-whoop to signify that he was bringing an enemy back with him. All the Indians came out to meet him and they killed the prisoner. Then they danced. The old women while dancing held their knives in their hands. This young man was indeed very powerful.

47.

Once a young couple but lately married were killed by the enemy. The two were the children of the chiefs. The Indians were very angry. They held a council and decided to kill every one of the enemy. Then they had a big dance and gave a great war-whoop. They took their tomahawks and entered their canoes. Every single one went along.

The lake was covered with Indians there were so many. They were singing and yelling. The enemy, however, were watching to see where they would land and as soon as they landed they attacked them. Their spears fell like rain and they killed many. Then the bravest of the Indians rushed at them with their tomahawks and the spears of the enemy were broken.

After they had killed most of the enemy one of the bravest warriors said, "Shall we kill all of them?" And some of them answered, "Let us leave some alive." The word passed from one to the other. Then they spoke to the few enemy they had spared, "Never try to kill any of us again, for if you do we shall certainly kill all of you."

48.

Once an Indian went out hunting and tracked a bear. He saw the bear walking ahead of him. When he caught up to it he said, "Where are you going." Then the bear turned around and looked back and started to run. The man also started to run and chased him. The bear ran just fast enough not to be overtaken. Toward the evening the man became very angry and said to himself, "I won't let him escape me. If I have to chase him two days, I'll do so and kill him." So that night the man stopped, made a fire, and slept.

Early the next morning he again started to track the bear. The bear, however, had not slept and had been watching for the man who was chasing him. Next day at noon the man became hungry and pursued the bear very slowly. The bear broke off a piece of basswood bark, tied it around his belly and stood up on the trail, looking just like a man. The man upon seeing him turned back.

49.

Once some old men were walking on a road along which some white people lived. One of the white people called out, "Look here is a snake. It is blowing. Would you have the courage to blow at it? If you dare I'll give you \$5.00." The Indian replied, "Yes, I'll blow at it." So he went back to the woods and got some snake medicine. Some of it he chewed and some of it he put on his hands. Then he picked up the snake. The snake and the man blew at each other. He blew on the snake's head until he killed it.

50.

Once an Indian was going to visit some of his relatives. On the way he passed a house from which smoke issued. There he found a man. This man said, "We are waiting for you for we want to ask you for some tobacco. We are badly in need of it." The Indian gave him all he had. "Well," said the man, "Here is a stone as a present. By means of it you will always know what is going to happen. If, for instance, it is going to rain the stone will sound."

51

Once as some women were canoeing on a lake and singing, their canoe suddenly stopped and the one who was steering said, "Paddle with all your might, although I think we are lost for a lion (water-spirit) is pulling us!" Looking down into the water the woman saw about half way toward the center of the canoe, the tail of the lion. Half of the tail was brass. Then one of the women said, "When I was fasting I was blessed by the thunder-spirits." So she struck the tail of the lion and cut off the part of it that was around the canoe. Then they paddled hard and on reaching home

told the men what had happened. The men were very angry. "Tomorrow we shall go and look for the lion," they said. The lion ran away and the men gave pursuit. However, the woman that cut off the lion's tail didn't go along so that the lion escaped.

52.

Once a young man was told by his father, "My son, it's about time you got married." "Why, there's no one here to whom I could get married. I'm related to all of these people. After a while I'll go to some other place and get married." When he thought it was about time he left to look for a wife. He got married and brought his wife back to his place. On their arrival the young man asked the girl for her name. The girl told him and then added, "My mother always told me that my father was once married at the place from which you came. My father's name was Migwis'wi'n." The mother then said that her father had had a girl borne to him from this marriage. Indeed the girl the man had married was his own sister. Then the old woman said to her son-in-law, "If you had stayed at home you would not have married your sister, but now that it has happened it is all right."

53.

An Indian was once chasing a fox. The fox ran off with the man in hot pursuit. In the morning he started again and chased it for the whole day. He rested again that night and on the following morning he chased it again and at noon he caught it.

54.

Certain Indians who went hunting had a fine, handsome dog. One evening this dog jumped up from the house, ran out, and barked. Finally it rose up in the air. They heard it barking and they continued to hear it, barking in the sky. Then all the dogs barked.

55.

This is about a man who gave a dance for the women. He prepared the drum and the rattles and he also got new leggings with beads. He bought a new silver brooch and new moccasins

with beads on them and also new ribbons. Four women wore all these objects. Then the man made them dance. He sang and beat the drum as they danced. Those women certainly looked fine when they danced.

56.

Once when an Indian was hunting he heard someone calling. He wondered why any one was calling him, but he answered anyhow. Then he went over to the place where he thought he had heard the man, and as he went close by he thought he heard someone whistling. Then he got frightened and thought it could not be an Indian. "I believe it must be a timber wolf," he said and ran away. He heard the voice calling him again, but this time he did not answer it. He ran as fast as he could, but the wolf pursued him. Finally he arrived at the place where his friends were staying and said, "We are going to die for a timber wolf is chasing me." "How do you know it was a timber wolf?", he was asked and he answered, "When I was hunting I heard something calling me and I wondered what it was. I answered. When I answered it called again, so I went to see the person. Then I heard a whistle and I thought it couldn't be an Indian, so I ran away. Then again I heard the call, but this time I didn't answer." "Well, that certainly is a timber wolf," they answered, "load your gun and we will go out to meet him." Then they went, met the wolf, and shot it.

57.

Once an Indian planted a good deal of all kinds of food. When the plants had reached a certain height it suddenly turned cold and everything was frozen, all that he had sown. He felt very sorry and said, "I am going to leave this place and do nothing but hunt all summer." So therefore the whole family left and they hunted all summer until autumn. They then went home. When they returned home they saw that all their crops were ripe.

58.

Once a hunter killed a deer in spring. They boiled it and in the evening they sat down to eat the meat. While they were eating

they heard a whippoorwill say, "Another whippoorwill is very close by." One of the people, an old man said, "Keep quiet. That's not a whippoorwill but an enemy." Shortly after the whippoorwill made a sound again. Then one of the people who was picking a bone clean said, "Let me hit this whippoorwill with the bone." So he hit the bird and it didn't make any noise all night. All night they watched for the enemy but they did not come. After they had had their breakfast one of them said, "The whippoorwill you struck early last night didn't make any more noise after that. Let us go and look for it." Then the man who had struck the bird went over to the place and they found a man lying dead. He had been struck on the head by the bone.

59.

Once an Indian out hunting saw a deer and shot at it. The deer fell and the man put his gun aside and went over to the place where the deer had fallen. There he started to skin the animal when he suddenly recollected that he had left his gun at some distance. Then he thought he would go after it. When, however, he turned around he suddenly saw the deer he had been skinning run off. He chased it, but he never caught it.

60.

Once some Indians decided to fish in a lake through some holes in the ice. They broke holes in the ice and made their spears. The next morning they left to go fishing. As they were fishing one of them said that he saw the stones at the bottom of the water moving. They exclaimed, "It is hopeless, we are drifting out." They got frightened and started to run. Then they jumped into the water, swam to the shore, and thus saved themselves.

61.

Once a young man got lost in the fog while picking berries. It was evening and he could not see his direction. At night he saw a house with a light in it. He walked toward it. The door was open for him and he walked in. Someone asked him, "Are you lost? If you are you can stop here for the night. Tomorrow you

can look for your home." So he slept there. The next morning he left. It was spring before he got home.

62.

Once an Indian had a pet crow. He thought he would teach the crow to speak so he cut out its tongue and it spoke, saying, "ha'o, ha'o, all right, all right; there isn't any, there isn't any; tobacco, tobacco." The man used to go out and beg for some tobacco and tea. This bird always knew when anyone was coming. He would then go outside and watch.

63.

Once a woman was going over to visit her relatives. In the evening she gathered a large quantity of wood to make a big fire for she was afraid of timber-wolves. However soon a timber-wolf came and when the wood was about burned out he leaped at her to bite her, but she pushed him towards the fire and so the wolf was burned. So she was free and she ran on her way again.

64.

Once an Indian decided to go and visit his relatives. The people told him, "Wait till tomorrow morning." Nevertheless he started out right away. He did not succeed in getting quite as far as he expected and he had to make a fire and stay over night. Then a wolf came upon him and although he fought hard, defending himself with burning sticks from the fire-place, he could not force the wolf away, and finally the wolf killed and ate him.

When, after some time, he did not return, his people went out in search of him. They found the place where he had made his fire, and where he had been attacked by the wolf and realized the fight he had made against the animal. The searchers then returned and described all they had seen. Then they went to the place that he had intended to visit and told these people what had happened; how night had overtaken the man and how he had been eaten by a wolf although he had put up a wonderful fight. "We found the burnt sticks with which he had tried to ward off the animal and also the knife and the axe. And yet in spite of all

this he could not force it away, and he was killed and devoured." Many people came out to see where the man had been killed.

65.

Once a little boy who could not yet speak very distinctly, was playing outside. He saw a robin and the robin said, "Come here, come here!" So he went towards the robin and the robin went still further. When the boy stopped the robin would stop and turn round and look at the little boy and say, "Come here, come here!" The boy went on and the robin started again. The little boy stopped again and then the bird turned round and looked at him, saying, "Come here, come here!" Thus the little one went farther and farther from the house and the mother of the little one was already looking all around the house for him. She even looked in the well thinking that he might have fallen in. Thus she walked around crying for her little son. Then all the men looked too. Then one of them saw the little boy walking with the robin ahead of him. The man ran ahead yelling at the same time, "I have found him!" The mother ran over, took the child and giving it something to eat said, "My dear boy!"

Soon after the robin came again running around the house. Then the woman said to her husband, "The robin is outside the house again. Let him stay. Do not touch him and let it stay with the Indians forever." The woman did not touch the robin and it stayed, making its nest there. In the autumn, however, it left and returned again in the spring.

66.

There was once an Indian who fasted very well, he fasted long during the winter and he "dreamt" of the thunder-spirit. When he wanted to make lightning he used to sing a song praising the thunder-spirit. Then when he had finished singing, he would cut up some tobacco, put some into the fire and some into his pipe. Then he would shout in the direction of the south, "Let thunder come!" The next day there would be a tremendous thunderstorm.

67.

There was once an Indian who never took his axe into his house although he had been told to do so. In winter too when it was cold he was told to bring it in. "If you don't, something will surely happen to you in connection with your axe!" But the man answered, "Is the axe alive that it can do something to me?" "Well, anyway, you ought to bring it in," he was told. He didn't do it, however. One day when he was going out to cut wood the axe slipped while he was chopping and struck him on the head.

68.

Once an Indian while hunting saw a deer, but before he could shoot it he saw a lynx sneaking up toward it. He did not shoot the deer therefore for he wanted to see what the lynx would do. When the lynx got close to the deer it jumped on the deer and dug its claws close into its back. The deer started running with the lynx on its back. The Indian followed the deer. The deer ran under the limb of a tree and the limb struck the lynx so hard a blow that it fractured its skull and it died.

69.

Once a man hunting along the river saw a lynx lying on a log which was floating along. The lynx was looking down into the water. The Indian watched the lynx to see what it was going to do. All at once it jumped and caught a white-fish. The fish started down the river swimming very fast. The man did not see the lynx for a long time and then he saw it again far down the stream. There the lynx emerged and swam to the shore. The man did not harm it.

70.

Once an old woman told her husband, "Today I am going to the fields." The husband said, "Don't go today. Wait for tomorrow. Then you can go." Then the old woman said, "Why do you say that? Why don't you let me go today?" The man answered, "You might see a water-spirit." But the old woman said, "Where would the water-spirit come from?" "All right, you

can go," said the old man, "however don't get frightened if you see one." Then the old woman started. When she got to the field she heard a sound and she saw something crawling towards her. It was crossing the field. She had never seen anything like it before. There she saw an enormous snake. She got frightened and ran home and told her husband that she had seen the snake. Then she asked her husband how he had known that she was going to see it and the old man answered, "I transformed myself into that water-spirit."

71.

Some old women, in the spring, at the time of the maple-sugar-making, were afraid that someone would kill one of them while they were preparing the sugar. Then one of the old women said, "They can kill me if they want to." The others said, "You had better run away with us." "No," said the old woman, "I won't run away. I shall let myself be killed." Then the others went away and she was left alone in the sugar-making camp. She worked on, gathering the sap in the daytime and the wood in the evening. Then she would hang up all her pails on the trees and begin boiling the sap. At night she took her drum and began drumming. Every once in a while she gave a yell and danced around the kettles and the people who came to kill the workers in the sugar-making camp, thought they saw many people dancing and shouting and they were afraid to approach. After awhile the men who had run away returned to look for the old woman and they found her boiling down the sap. "How did you escape?" they asked her and she answered, "I danced and I yelled and I sang all night and no one came. I kept this up till morning."

72.

A man out hunting came upon a fox standing still. The fox did not see him for some time. When he did he ran into a hole. The man stood still watching for it to come out. Then the fox stuck its head out and the man shot at it but didn't hit it. So he stood there and watched for the fox to expose himself again. Again he shot at it, but he didn't hit it. Then he fed the fox.

73.

A woman looking for her husband was crossing the river on a log. She slipped, fell into the water and was drowned. The people had one of the conjurors look for her to tell them what had happened. This conjuror said, "Over there she fell into the river. In two days' time you will find her." So after two days' time they found her, took her home, and buried her.

74.

A woman about to pay a visit to her relatives told her people when to expect her back. They went to meet her at the appointed time but she did not return. The next day they went again, but she did not return. Then one of the people said, "You had better go over there and find out if she arrived at her destination." So they went to one place and were told that she had not arrived. So they returned and told the others about it. Then someone started for another place and they were told that she had arrived and had started for her home at the appointed time. This person went back and informed the people. "She must have been killed on the way back." Then a conjuror was called to find out what had happened. The conjuror told them that she had encountered some of the enemy and had been carried off. At this the Indians became very angry and said, "Well let us go and attack them; let us kill them all." So they all smoked and the bravest of the warriors took up their tomahawks.

About that time a terrible thunderstorm struck across the enemy and some of the enemy were killed by lightning. Then some of the women and old men said, "The people of the woman whom you captured are very angry and they have all just taken up their tomahawks and are coming over here to kill us all. You had better take the woman back. Put her on horseback. Let her have a horse. Take her away immediately." The woman was accordingly put on a beautiful mare, and so while the warriors (of her people) were dancing a woman was seen riding in on a horse. They looked up, saw who the woman was, put down their tomahawks, and shook hands with her.

Then the woman told what had happened to her. "While I was walking along I felt frightened, but still I walked on. Soon I met four men on horseback. They seized me and put me on one of the horses and carried me off. When I got to their place they fed me and gave me water to drink. Then a terrible thunderstorm came up and struck the tent of our enemies and many were killed. Then an old woman said, 'It is this woman who has brought the storm. Take her away immediately. Give her a beautiful horse and let her keep it.'"

The thunders are of two kinds. Some are small men. These are the ones who always strike with lightning; others are big and they never strike.

75.

Once a man was chased by a green snake. When he saw it it was about to jump at him. He shot at it but he did not hit it. Then he shot at it again and ran away. The snake chased him, caught up to him, and coiled itself around him, throwing him to the ground. The Indian barely succeeded in getting his knife out. He cut the snake in half and killed it.

76.

There was once a man who could run very fast even when his hands and feet were tied. He raced the clouds and he beat them; he raced the lightning and he beat it. Nothing could beat him. Then he raced with an elk and he beat it. No animal could beat him. He looked around for something else to compete with. Then he raced with the wind and he beat it. He could find nothing on earth which could beat him. Finally he decided to race the noise that the ice makes when it cracks. He listened carefully and when the ice started to crack he started to run. But it beat him. This was the first time he was defeated.

77.

There was once an Indian who hated his father-in-law. He would always quarrel with him. The old man, however, never answered back. Once when he was cutting wood he heard his

son-in-law behind him saying, "You old man I would like to fight with you!" Indeed he was just going to hit him when the old man turned and said, "Why is it you hate me so?" The young man answered, "Just because you are a wicked old man; and now I'm going to fight you." The old man said, "Just wait a little until I get my axe down. Then I will fight you." Then they started at each other. The old man said, "Fight with all the strength you possess, for when I was young none could defeat me." Soon the old man started to swing his son-in-law around and when he was swinging him fastest he let go and the young man fell on the ground at some distance. Then the old man said, "You are no good." Then the young man rose and said, "Now I am angry. Before I was only fooling." But the old man answered, "No, you are not strong enough. So far whenever you met me you made some remark, but I never minded it. Now, however, if you don't stop I'll do more to you than I have just done." Then the young man left and the old one went on cutting wood. From that time on he never annoyed his father-in-law.

78.

Once a man took sick. He was not able to use any medicine, because he knew none. However, one night he dreamt that a person was speaking to him and said, "You are very sick." The man answered, "I am not taking any medicine." Then the voice answered, "You will not get better until you take some medicine. Look at yonder tree. If you make medicine from it you will get better." Then the sick man looked at the tree and he saw that it was a buttonwood. "There where the tree is spotted you should cut some of it and make a medicine. Drink it and you will be well."

When he woke up he told the people about the dream he had had. He asked some one to go and get the bark of the tree and make the medicine from it. When it was finished he drank it and got well.

79.

Once an Indian tracked another one for a long distance just to find out who he was. When finally he came to a lake he saw

nothing but a pair of moccasins. He therefore returned home and then he found two raccoons lying near his blankets. He killed them and skinned them and hung them up near the fire to cook. Then he ate them. Then he said to himself, "Tomorrow I'll follow his footsteps again."

80.

Once an Indian came upon the track of a raccoon. He followed it until he saw that the raccoon had climbed a tree. This tree he then cut down and when it fell he ran over to its top. To his surprise he found two fish. These he picked up and took home with him. When he got home he was told not to eat the fish, for they could not be good since no one ever heard of fish walking around and climbing trees! However, the man said, "I am going to eat them for they are real fish." The others replied, "They may be fish, but really, who ever heard of fish walking around and climbing trees! Fish always stay in the water, so these cannot be normal fish!" The Indian replied that he had worked hard to get and kill these fish and that one had to eat if one did not want to starve. The others continued, however, and said, "Something will happen to you if you eat these fish!" The man then said to the others, "Will my eating the fish hurt you?" "Well, no, it will not harm us. We were only warning you. We shall say no more." Then he boiled the fish and when they were cooked he ate them. Soon afterward he got frightfully thirsty and began drinking continually. He drank all the water there was in the house and then he went down to the river and drank there. He could not quench his thirst. Finally he waded out into the water and sat down there and drank. Then he dived and drank under the water. The people said, "We told this man not to eat the fish, that they were not good, but he would not believe us. Now you see what has happened to him. This happens to all who disobey when they are told something." Then they went to watch the man who was drinking. When they arrived they did not find him, but found a large fish instead.

81.

Once an Indian hunting raccoons heard some children playing. As he came up close he saw a cave¹¹ in which children were laughing and talking. (It was a fish cave.) The big fishes told the smaller ones to play quietly for otherwise someone would come and hear them. Then the man broke up the cave. The older fishes said, "I told you to keep quiet and not make so much noise!" The man killed them all.

82.

Once an Indian was calumniated by his enemies among his own people. These claimed that he had said that he could defeat the best fighter amongst them. Then he was asked whether he had said it and he answered, "No, I never did." But his enemies said, "Yes you did." Then the Indian became somewhat frightened. Again he was asked if he had ever said it and again he replied that he never had. His enemies however continued to say it and finally he got angry and said, "Now I really am angry and I am not afraid to fight this man." Then the fight was arranged. When the day came his opponent said, "Today you shall die," and struck at him. But he missed him and the Indian said, "This is the last time you shall see daylight." With that he struck him and killed him.

83.

My father used to tell me of things that took place among some of the Indians living along the St. Clair River below Sarnia.

A family had one day placed a little cradle board with a baby in it outside their house. When shortly after one of the family went out to take it it had disappeared. They immediately went to a *mide* man and a conjuror (a *tciski*), and asked them to find out where the child was. The conjuror told them that a lion who lived on the other side of the river had stolen the child and taken it to its home.

¹¹ The informant was not certain as to the meaning of the word. He finally rendered it as "cave."

The people then paddled across and found out where the lion lived. As they started to dig into its home they heard the child crying. Then they told the lion not to kill the child, but he would not heed them and when finally they got to the child it was dead. The lion however escaped.

The body of the child was taken across the river to bury it and when they had finished this, they had some *mide* and conjurors find out where the lion had fled to. They were told that it was across the lake and they went there, but again it escaped. It went towards the west about seventy-five miles from Port Huron to a place where there were about five inland lakes. The *mide* and conjurors were again asked to find out its hiding place and the men, followed by some women in boats, pursued the lion. As they were paddling along, they noticed something like a brass tail coming to the surface near their canoe and one of the men struck it and cut it off. The lion however again escaped and went north, but the *mide* and conjurors followed it and finally killed it.

84.

Once a young girl fasted for a long time. She finally got lost. The parents of the child missed their daughter keenly. After many years they heard someone yelling one night and immediately ran out, built a fire and threw some meat into it. Then the *pagak* (their daughter) lowered herself and soon they saw a person standing outside. They took her in immediately and kept her. They gave her a little soup to drink and after a while she put on a little flesh. When she had become quite fat they recognized her as their daughter. They were very glad and went around and told the other Indians. The Indians came over and danced the whole night but the girl who had come back did not dance. They afterwards sat around her and she taught them many songs which they could sing. These are the songs that the *mide* and conjurors (the *tciski*) sing to the present day. When they sing it is either to a bad medicine or one that is to be used for curing. All these songs the conjurors obtained from this woman.

85.

Some of the people who fasted used to go away and fight. There is a story of how ten of these started out and said to their chief, "Tomorrow you will see a buffalo and you want to watch out that no one says anything to him." So then they went. The next day at noon they saw a buffalo and one of them was disobedient and said, "I'm not afraid of a buffalo." The buffalo heard him and started to run for the man, and this one who had said he was not afraid of a buffalo was told, "You had better run away." The buffalo chased him and he ran a great distance. Then he turned around on the buffalo, killed it, and cut it up into fine pieces. He then chased the people with whom he had started out. One man who was ahead of the others said, "Tomorrow we shall arrive at the place where we are supposed to be going." The next morning the Indians were fighting among themselves but no one was killed. Finally they decided to stop and go home. (When men returned home singing the people immediately knew that they had killed someone, but as they had not killed anyone this time they returned home quietly. Only when they came home yelling could their families know that they had killed someone.)

86.

A conjuror whose name was Nānegusṓ'n had three little conjuring lodges and another one had four of these lodges. A third conjuror had a piece of ice in his body and was quite ill; so he called for one of these two conjurors to tell him why he was unable to kill any game. Then he was told that a man named Nisawankwō'd was the cause of his bad luck. Then the man asked that Nisawankwō'd be brought into the conjuror's lodge. This was done and he was then asked why he was acting this way and preventing this man from killing game. Then Nisawankwō'd answered, "He did not give me any meat when I asked him and I shall never forgive him for this." Then the relatives of the man said, "You had better kill him." So the conjuror killed him, i.e. he killed the soul of the man that was in the conjuror's lodge. (The body died wherever the owner happened to be).

This is what the conjurors did.

87.

Once an Indian who was a *mide* called all the birds together. The bat also came but he was told that he had not been invited. "Certainly I have been invited for I fly through the air and have feathers on my back." But nevertheless he was not taken. Then he went away ashamed and crying. Since then he always travels at night.

88.

Once there was a woman living in a house together with her little sister. They used to hunt every day and killed a lot of game, deer, bears, and everything. Both of them fasted when they were young. The elder one knew more medicine than the younger one because she had been blessed by the ice.

One day when she was going after water in the winter she made a hole in the ice and, while she was dipping water out, she fell in. She was under the water and she used her knees to break through the ice. Whenever one hears ice crack now it is the elder sister trying to break through the ice with her knees.

She was under the water four days and then she broke through and went home. She did not drown because she had fasted.

One time when she was alone an Indian came along whom she had never seen before. She did not know who he was but he was in reality a "wild man." He asked her to marry him. She accepted him and had children from whom those we call "wild men" are descended.

89.

Once an Indian and his wife lost their little boy, the only child they had. They wondered where he could have gone, hunted high and low, and asked every one they met about him. No one knew of him. Then they asked where a *mide* or conjuror lived and they were told. They told the conjuror that they had lost their boy. "We looked for him last night and could not find him anywhere."

They then accompanied the *mide* and conjuror to a dance and danced all night. In the morning they were told that a bear had stolen the child. They asked the two men where the child

and the bear might be just then. The *mide* told them that they were in the woods, in a big hollow tree and that the boy was well. The parents then asked the conjuror to go after the boy and he consented. He left immediately. When he came to the place, the bear came out and the conjuror said to him, "I have been sent here to come after the child. His parents are crying for him and I beseech you to let him go right away." "I will not let him go today," said the bear, "but tomorrow you may expect him." However the boy did not come home and after a few days the parents again sent the conjuror to the bear. The bear came out again and the conjuror said to him, "I have been sent here to take the boy home." "It is not time for the boy to go home," said the bear, "for he is to stay here with me for another year. I keep him here so that he can stay at my house and take care of my children. You can go away now and tell the boy's parents, that when the time is up they should build a little log lodge and I will bring the boy there."

When the year was over the parents built a little lodge and the boy was brought there. They had been told that no one should come to see the boy. Two little girls however went to see the boy and he was transformed into a dog and went under the ground and has never been seen since.

From that time on parents taught their children to remain in the house after the sun had set.

90.

One of the Indians was a *mide* and knew many medicines. When he was fasting he dreamt of a snake and he afterwards used part of this snake in his medicine. He knew where the snake could be found. He used to go to the place where the snakes lived and sing to them. Once he went there and sang for two days. The snakes came out, one of them being four hundred feet long. He pounded this snake to death. This was the snake of whom he had dreamt when he was fasting and who had blessed him.

This man was the most powerful of all the *mide* and conjurors. No one could overpower him. This is what is told about this man.

91.

I know of another man who was blessed by a tree and he was given also the blessing of knowing things in the future. One day his wife took sick, so he knew that she had been made sick by another woman, through witchcraft. That night, he said, the witch would come again, but she would not be able to get in for he had medicine also. After it got dark, he went out and sprinkled the medicine around the house, and on top of the house, and went in. Soon they saw the fire sparks some distance away, and it was coming towards the house. Soon they heard someone fall on the roof of the house, and the man said, "Yes. You may come in spite of my medicine." So the next morning they heard that the woman who fell on the roof of the house was dead. This is another man who had power to kill anyone without touching the person, just by putting medicine where the person was going to pass.

CHRIST COLLEGE,
CAMBRIDGE, ENGLAND.

THE PETROGLYPH AT ALDRIDGE POINT, NEAR VICTORIA, BRITISH COLUMBIA

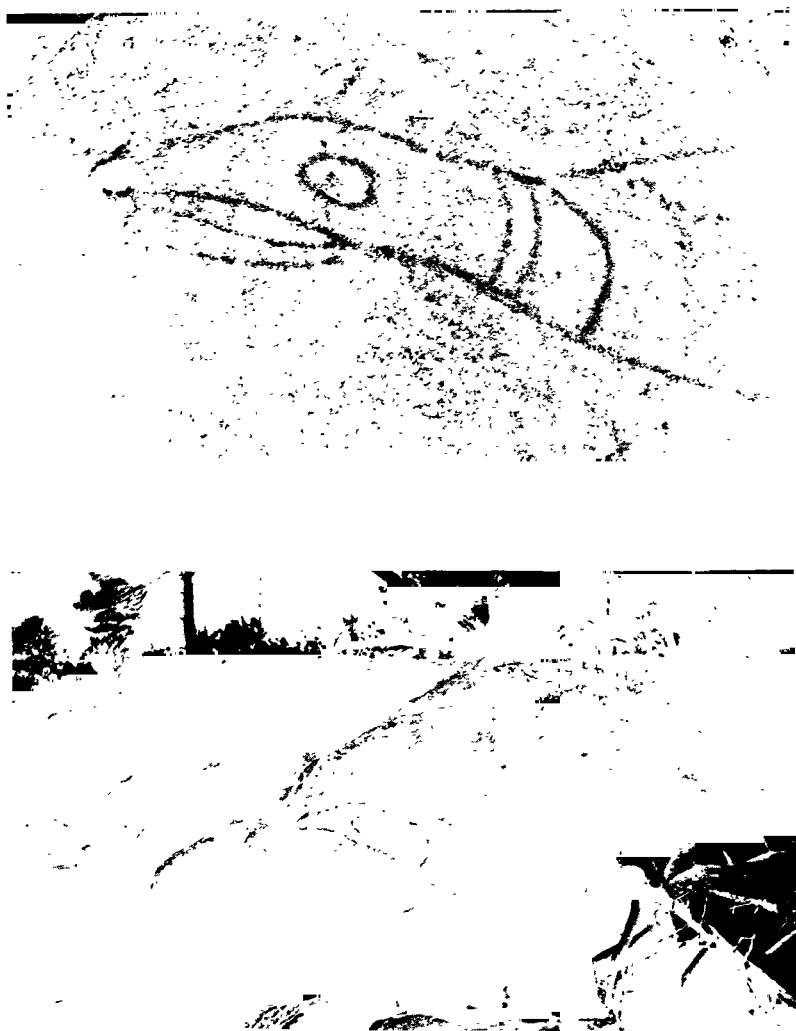
BY HARLAN I. SMITH

ON ALDRIDGE point, about fifteen miles westward from Victoria, is a petroglyph. Aldridge point is on the western side of the entrance to Becher bay in East Sooke, slightly to the east of Beechy head, the most southern point of Vancouver island. The petroglyph is near the international cable landing, but a little further along the shore going westward. It is in the olivine gabbro (Div. of Anthropology, Victoria Memorial Museum, Ottawa, Cat. No. XII-B-1565) between the high tide line and the spray line at a place immediately eastward from the fault on this point. The fault is shown on the East Sooke Map sheet, No. 167A, of the Geological Survey of Canada.

I was told, on September 27, 1923, by Mr. C. C. Pemberton of Victoria, that Mr. Allan Ford of the same place had informed him of white markings on the rocks at Aldridge point. These might be of a petroglyph, but this description did not seem promising, and that petroglyphs should exist in plain sight on the shore in this old settled district, within fifteen miles of Victoria, without having been found by the several industrious archaeologists of Victoria, or even reported to them, also seemed unlikely. On September 29 Mr. Ford kindly took Mr. Pemberton and myself to the place. Here it was seen that the markings were clearly of an aboriginal petroglyph.

This petroglyph was formed by bruising lines in the rock. The lines average about an inch wide by perhaps a quarter of an inch deep. The natural surface is made up of large crystals weathered out in relief. These throw shadows and the intervening spaces have caught dirt, lichens and the like. Thus it appears dark like a stone building in a soft coal district. The surface of the bruised lines of the petroglyph, on the other hand, is smoother and consequently not only shows smaller shadows but little lichen or other dirt. It appears light in contrast to the natural rock. From a distance the lines resemble faint chalk marks.

One of the figures represents a gigantic animal form, possibly a seal in profile. It is illustrated in Figs. 1 and 2. Another to the west of this, while plainly seen in part is difficult to trace out to a complete



FIGS. 1 and 2.—Views of the petroglyph, looking more or less westerly, immediately east of the fault on Aldridge point, on the west entrance of Becher bay, East Sooke, Vancouver Island. The petroglyph is about at the high tide mark, but below where the surf dashes.

form, and consequently what it represents has not been identified. Although Mr. Ford thought he had seen a figure, representing a whale with a large dorsal fin, at this place, we were unable to find further figures in the short time, perhaps fifteen minutes, which we had at this site. In addition to taking three photographs from varying distances to the eastward, I made moving picture stills of both figures and the scenic panorama for the National Museum of Canada.

The character of the art seems to resemble that of the petroglyphs near Nanaimo, and to differ from that known on the coast north of Comox.

NATIONAL MUSEUM OF CANADA,
OTTAWA.

BOOK REVIEWS

AMERICA

Catalogue of Human Crania in the United States National Museum Collections: The Eskimo, Alaska and Related Indians, Northeastern Asiatics. ALES HRDLICKA, Curator, Division of Physical Anthropology. No. 2480. Proceedings of the United States National Museum, Vol. 63, Art. 12, pp. 1-51, Washington, Government Printing Office. 1924.

One of the most encouraging and epoch marking events in the history of Physical Anthropology in America is the appearance of the first installment of what promises to be a complete catalogue of the osteological collections in the U. S. National Museum together with such other collections or portions of collections as the author has studied. Only one who has sought for comparative American material will appreciate the deplorable dearth of data on American crania and other skeletal parts. In spite of the fact that there are now housed in American museums wonderful collections of American aboriginal remains, nearly, if not totally, adequate for a fairly complete definition of American types and their interrelationships with each other and with non-American groups, the modern treatises on American crania are very limited in number and most of these are defective either in the kind or number of measures taken. Consequently this catalogue will fill a long felt want and it is to be hoped that it will stimulate other American institutions to publish catalogues of their own.

The first number describes 412 crania, representing Eskimo from Greenland, Baffin Land, Smith Sound, Alaska, St. Lawrence Island and Asia. In addition, Aleut, Tlingit, Haida, Apache and Lipan crania are also included. A large collection of Mongolian crania from Urga and a smaller Buriat series complete the number.

A unique and commendable feature of the catalogue is the inclusion of averages of the measures and indices. This will add greatly to the range of usefulness of the catalogue as will also the brief notes at the end of each section, summarizing the author's valuable opinions as to the relationships of the groups described.

I regret sincerely that I cannot end this review here without the addition of adverse comment. Nothing but the extreme seriousness of his offense could tempt me to criticize this notable contribution by one of the foremost anthropologists of the world.

Doctor Hrdlicka has not profited by history. Those who have attempted to obtain comparative material from the catalogues of Davis, Flower, Quatrefages and Hamy, Morton, Virchow, Otis, and of some of the German museums, will appreciate the fact that their usefulness is greatly diminished either by the dearth or peculiarity of measurements taken. In these catalogues this is largely excusable since many of them were made when craniometry was in its infancy, the dates of publication ranging from 1839 to 1892. But it is hard to excuse the publication in 1924 of a catalogue already out of date in that the measures given are inadequate to define the form of the skull or to conform with the recommendations of international deliberative bodies, composed of many physical anthropologists of long experience. It is another example of that individualism which has retarded the normal progress of craniometry. Individualism is proper enough after some concession has been made to the opinions of one's colleagues.

Only eleven direct measures are given altho the International Agreement of Monaco, 1906, calls for upwards of 32 measures when the mandible is included. Specifically, Doctor Hrdlicka omits such measures as minimum and maximum frontal diameters, basionasion, basion-prosthion, maxillo-alveolar length and breadth, all of the arcs and practically all of the mandibular measures as well as several other recommended diameters. The absence of such measures is not serious for the author who has had an opportunity to examine the material visually. With his long experience and talent for seeing relationships, measurements are of secondary importance. But for purposes of scientific presentation, the publication of measures is supposed to define and describe the crania for the craniometrist or the student who does not have an opportunity to examine the material at first hand. The measures given in this catalogue do not do this. We have no measures of the frontal region, of prognathism, or of the alveolar or dental arches. This deficiency is particularly serious because the material under consideration is American. In America we have series of crania, some of which parallel certain Melanesian series and others of which "parallel" certain Caucasian series of crania. I say "parallel," altho this is the debatable

question which can be settled only when we have enough measures to completely and adequately define the form of the skulls discussed.

Were this an ordinary publication, the omissions noted above would pass unnoticed but this is a catalogue of the collections in the United States National Museum and the lack of conformity to international standards is a more serious offense than it would be for a private institution to publish an individualistic catalogue. I would also be more lenient if I did not know that for a very large number of series, at least, the author has already taken the measures omitted in the catalogue. The plea of lack of space will not excuse the omission for, throughout the whole catalogue, the left hand page is largely wasted. Columns 2, 3, 4, and 5 could be done away with very economically and conveniently by the use of index numbers and footnotes. This would enable the inclusion of nine or ten more measures and make the catalogue so much more valuable.

It is to be hoped that these defects can be remedied before the appearance of the next section of the catalogue so that my first sentence may be allowed to stand unqualified.

LOUIS R. SULLIVAN

The Ammassalik Eskimo. WILLIAM THALBITZER. In two parts. Second Part, No. 3, Language and Folklore. *Médelelser om Grønland*, Vol. XL, Copenhagen, 1923.

This is the second volume of Thalbitzer's great work on the Ammassalik Eskimos of East Greenland, the first appearing ten years ago as Vol. xxxix of the *Meddelelser om Grønland* series. Like the former volume, the present is divided into sections, of which the two first deal exclusively with Eskimo music as transcribed from phonograph records. The third, and by far the longest section, begins with a phonetical and grammatical study of the Ammassalik dialect. This is followed by copiously annotated texts and translations of a large number of songs from the Ammassalik area, together with a few traditions in prose. The book concludes with a few song texts and translations from other parts of Greenland.

The phonetical and grammatical portions are conducted along the same lines as the Illustrative Sketch of the Eskimo language, published by the same author in the Handbook of American Indian Languages. One hopes that Mr. Thalbitzer will shortly complete them with a comparative vocabulary of the Ammassalik dialect where some of its special features, such as the consonantal changes

and the uvularization of certain vowel sounds, can be more readily studied. In certain respects the dialect seems to have a distinctly archaic flavor, although in most cases it appears to have changed far more than the related dialects in W. Greenland.

It is a little difficult to keep a true perspective amid the great mass of song-material which makes up the larger portion of the volume, owing to the large number of variant texts that are given and the wealth of elucidative notes. The different types of songs and poems are rather striking. Six main varieties are distinguished, most of which are still further subdivided. There are "epic-lyric" poems, hunting or kaiak songs and berry-picking songs, magic prayers or charms, religious drum songs or angakok songs, mimic-dramatic drum songs and juridical drum songs.

Some of these song-types appear to be confined to Greenland, though they may extend in some cases to Hudson Bay. The "epic-lyric" poems, which comprise petting-songs, nursery rhymes, children's ditties, and recitative poems concerning animals and other phenomena in nature, can be paralleled in many cases from other Eskimo regions; the altercation between the wheat-ear and the raven, for example, is found in other versions among the Copper Eskimos and in Alaska. Kaiak and berry-picking songs, which make up the second class, have not been recorded, to my knowledge, outside of Greenland; but the third, magic prayers or incantations, are current everywhere. Angakok songs, too, were probably very widespread at one time, though in many places they must have disappeared through the introduction of Christianity. Mimic-dramatic drum songs, on the other hand, seem peculiar to Baffin Land and Greenland, while juridical drum songs are especially typical of the latter region, although Nelson describes something similar from Bering Strait in Alaska and contests in song appear in an embryo form among the Copper Eskimos. One misses from the Greenland collection the game songs that are not infrequent among the western Eskimos and elsewhere (e.g. the song to accompany juggling with stones, and particularly cat's cradle chants; but possibly the game of cat's cradles is now unknown in Greenland south of Smith Sound, for I have seen no reference to it in any author). More than all, one misses the ordinary dance-songs so popular from Bering Strait to Baffin Land, songs that celebrate any and every event in the lives of the people and are sung at all times and in all places, but most often in the dance-houses to the accompaniment of the drums.

Undoubtedly the juridical drum-songs of the Greenland natives are only a development of these every-day dance-songs, which appear in a somewhat more formal dress in the Central Eskimo region.

The brief number of Ammassalik folk-tales incorporated in this volume are only a tithe of his collection, Mr. Thalbitzer tells us, lack of space preventing the publication of the remainder. Several versions are given of some well-known myths, such as "The Woman who married a Dog" and "Sun and Moon." It is interesting to find among them the legend of the "Troll-Woman who drinks until she bursts," for this legend, which Mr. Thalbitzer found also in West Greenland, is known to the Hudson Bay Eskimos and to the Copper Eskimos of Coronation Gulf; moreover, quite recently, it has been discovered, in a divided form, among the Sikani Indians of northern British Columbia. It is thus one more example of the fact that the Eskimos and the northern Indians of America had formerly much closer relations with each other than has often been recognized.

It is impossible to review Mr. Thalbitzer's work at all adequately in a few paragraphs. The task he undertook for himself was tremendous, no less than to lay bare the inmost structure of the Ammassalik dialect and to interpret its unwritten literature. His unrivalled knowledge of Eskimo dialects has enabled him to succeed to a remarkable degree. The layman may find his book tedious on account of the very completeness that makes it so valuable to the specialist. Not everyone will share his enthusiastic appreciation of Eskimo prose and poetry, but no one can fail to admire his brilliant presentation of it or the sound scholarship that pervades the whole work. It marks, indeed, a mile-stone in our knowledge, not merely of Eskimo literature, but of native literature in general.

DIAMOND JENNESS

The Toba Indians of the Bolivian Gran Chaco. RAFAEL KARSTEN.
(Acta Academiae Aboensis, Humaniora IV). Aabo Akademi:
Aabo, 1923. 126 pp.

This is one of the studies, based on field investigation, which Professor Karsten, of the University of Helsingfors, has recently contributed to South American ethnography, fortunately for us in the English language. His predecessors having given some description of Toba somatology and technology, he confines himself to sociology and religion.

The Toba form part of the Chaco group known as Guaycuru and are thus related to the Abipones; their habitat lies in the pampas of

Bolivia and Argentina. Professor Karsten enhances the value of his paper by constant references to neighboring tribes. A student of North America naturally seizes upon a number of correspondences with cases familiar to him, in the hope of helping towards an ultimate general distribution study for the whole of the New World.

The Toba had no caste system, yet sons of war chiefs enjoyed some distinction,—a phenomenon recalling some tribes of our Southern Plains. There is normally matrilocal residence, which is coupled with maternal descent, though the author is not clear on the subject of clans, speaking of the children as “supposed to belong to the mother’s *tribe*” (p. 19). The couvade formerly existed in the classical form, and even today the father, while not remaining in bed, abstains from labor and certain kinds of food. Women in confinement are also prohibited from work and avoid the taste of fish, and a rigorous fast is likewise prescribed for a girl at puberty. Though the author does not explicitly state it, five is clearly the mystical number of the Toba: the period of abstinence in the situations cited is five days, and the same recurs in the myths about the darkening of the sun and the falling of thunder bolts (pp. 22, 27, 109, 110). This is a point of interest because five as a sacred number seems to be very definitely restricted in distribution north of Mexico.

The Toba were a warlike people, who took both scalps and heads for trophies, the former being hung on high poles in the middle of the village, where a dance was performed round them by the younger warriors (37 f.).

Although mythologically there is a belief in a great Evil and a great Good Being, these are in practice of little moment compared to the *peyák*, i.e. the evil spirits, which often bear the shape of birds, and the good spirits aiding shamans. The subordinate part played by all heavenly bodies is noteworthy (p. 46). Disease is uniformly caused by evil *peyák* who have entered the body and must be extracted in the form of splinters. The physician shakes a strap with small bells, sings an incantation, spits and blows upon the affected part, and ultimately disengages the splinter with the aid of his tutelary, who is invoked in a special song (50 sq.). It is naturally impossible to summarize the description of sacred dances, but we may note that while women do not participate in the great festival called *nomi* they are not barred as spectators.

The chapter on mythology seems meagre, and the few tales recorded are only partly given in the native style. However, enough

has been said to show that Professor Karsten has made a valuable contribution to our knowledge of a very interesting people.

ROBERT H. LOWIE

ASIA

Social Organization of the Manchus, a Study of the Manchu Clan Organization. S. M. SHIROKOGOROFF, anthropologist of the Museum of Anthropology and Ethnography of the Russian Academy of Sciences at Petrograd. Royal Asiatic Society, North China Branch, Extra Vol. III, Shanghai, 1924. 194 pp.

In this learned and critical monograph the social organization of the Manchu is studied and set forth for the first time. The author's researches were made at Aigun in northern Manchuria where the Manchu element is preserved in a purer form and less influenced by Chinese than in southern Manchuria and Peking. He formulates the following definition of the clan: The Manchu clan is a group of persons united by the consciousness of their common origin from a male ancestor and through male ancestors, also united by the recognition of their blood-relationship, having common clan spirits and recognizing a series of taboos, the principal of which is the interdiction of marriage between the members of a clan. The clan also includes the women adopted as wives by the male members of the clan. A clan-meeting at which all members from boys to old men are obliged to be present is called once a year. On the first day a sacrifice is offered to the ancestors and clan spirits, an animal (not connected with totemistic practices) being selected in accordance with the rites of the clan and the sense of the assembly. A master of ceremonies elected by the members directs the sacrifice and the banquet following it. On the second day of the meeting the clan-chief is elected. He is usually a young man, but as a rule at least 25 years of age. Social position and wealth are not considered, but the candidate is required to be well bred, honest, tactful, and able to govern. There is no vote, the candidate is proclaimed *viva voce*. There is no restriction to the duration of office, but in case of inability he may offer his resignation. The clan-chief's power equals that of a governor-general of Manchuria, and there is no appeal from his decisions. He presides over the clan meetings, has the function of a supreme judge, decides all important clan affairs, supervises the clan rites, watches over public and private morality, keeps the clan register, issues permits for marriage and inheritance, and advises the clan members on business

matters. Sometimes he maintains his position for twenty years and even longer, and he may be succeeded by his son. In case his actions are contrary to law or meet with the disapproval of the assembled clansmen, the matter is laid officially before the meeting, and the chief is obliged to submit his resignation, which according to the case may be accepted or declined. Frequently the assembly is content to address a reprimand to him and allows him to remain in office. His position is unsalaried, and when rich, he may help poor clan-members. His power within the clan is almost absolute, and all clan members are treated alike within the organization. The women take no part in the men's assemblies, but address their petitions to the clan through the chief or to the latter directly. The women, however, are organized separately, exactly like the men. On the third day of the clan meeting a women's gathering takes place; it embraces all unmarried women born in the clan, as well as the women adopted by the clan through marriage. The women elect a woman clan-chief imbued with the same functions and rights as the male clan-chief. Questions of a similar nature are discussed, the same rules and customs are observed as at the men's meeting. No man save the clan-chief is permitted to attend the women's convention. Affairs concerning both men and women are submitted to a joint meeting. In case of a complaint against a woman, the man in question must state his case to the female clan-chief. It is not surprising that the author assures us that he could not make any direct observations regarding the female organization, but that what he knows he owes to the communications of men who naturally know little about the subject, as they are barred from the women's meetings and know merely what the women please to tell them. The point is interesting, for it bears out the fact that the Manchu women understand the art of keeping their secrets. The author concludes that "obviously the women's organization as a social phenomenon has no such importance as the men's organization; Manchu society like all societies known up to the present time is based on the preponderance of man, not of woman." This is a somewhat hazardous generalization: we know of many primitive societies in which woman wielded as great a power as man or even a greater power; in Asia, the classical example is presented by Tibet. Military service which the author gives as a reason for male hegemony certainly was not the direct cause of it, but was the outcome of historical developments which naturally had the tendency to strengthen man's influence. "Finally," the author remarks, "hunting

and agriculture could not be women's trades, either" (p. 56); but on p. 105 (again p. 123) he states that two processes of fishing and searching for edible grass and roots are duties exclusively reserved for women, and that even the care of cattle, swine, and poultry are woman's business.

The clan system also has a religious significance in that the members of a clan are united by ceremonies pertaining to the worship of ancestors and shamanistic practices. Every clan has its own group of spirits peculiar to it. Shamanism is one of the elements forming the basis of the clan organization, and with it the existence of the clan is bound up. Every individual, through the clan, is firmly attached to the system of spirits from whom he receives assistance through the mediation of those familiar with the clan-rites. A list of 42 clans with their Manchu and Chinese names, as well as 10 tables explaining the systems of relationship, is given. The author refers to a Manchu book which contains a complete description of the clans, their names and history, and regrets that he was unable to obtain a copy of it in Peking, 1917-18. A complete copy of this rare and important work is in the reviewer's library, and he would be pleased to place it at the disposal of any one who is qualified to make the proper use of it.

There are two detailed chapters on marriage, exogamy, levirate, sexual taboos, wedding, divorce, division of labor, woman's rights, childbirth, education, and woman's work. As to customs bearing on childbirth and marriage it would have been desirable that the author might have collated his data with those of W. Grube (*Zur Pekingers Volkskunde*), who has given a very full description of the analogous customs of the Peking Manchu; this work is not cited in the author's bibliography, either. His description of a Manchu cradle, accompanied by a sketch, may interest our Americanists. The discussion of economic conditions, as agriculture and domesticated animals, is very interesting. Swine-breeding is fundamental, and pork is the principal flesh food. Pigs are the unit in calculating the bridal price or a ransom. Some clans do not use the pig as a sacrificial animal; others, like all Mongol-Manchu clans, use the sheep; others again, the badger. Artificial incubation of chickens is understood and practiced. The author observes that in distinction from the Chinese the Manchu do not sow maize in the field, but in the kitchen-gardens. This held good for nearly all parts of Europe and Asia when maize first became known after the discovery of America. It first was merely planted in gardens and at a later stage rose into a field-crop, as I hope

to show in detail in a new study of maize; in Fu-kien Province maize is solely known as a garden plant. Tobacco-cultivation and the characteristic long pipes of the Manchu are not mentioned. For the first time the author figures and describes a peculiar Manchu plough in the shape of a sledge (p. 135). There is every reason to be grateful to the author for his thorough investigation of a people that is in a complete state of disintegration and threatens to disappear as an ethnic unit. The Asiatic Society of Shanghai also merits our thanks for having published this volume. Our only regret is that the work has not had the benefit of an English proof-reader. Mr. Shirokogoroff has written English for the last two years only and struggles with the language nobly, but not always successfully; grammatical and stylistic errors are numerous, and there are many unintelligible sentences. Who is able to understand the long sentence on p. 104 (second paragraph) consisting of fourteen printed lines? Since 1915 the author has been carrying on extensive researches in eastern Mongolia, Manchuria, and Siberia, studying the ethnology of the Tungus, Dahur, Manchu, and Chinese. He has made large collections of Tungus folk-lore in texts and translations, and has prepared a comparative dictionary of Tungus dialects on cards. Much important work from his pen may be anticipated in the near future.

B. LAUFER

OCEANIA

The Material Culture of the Marquesas Islands. RALPH LINTON.
(Memoirs of the Bernice Pauahi Bishop Museum, Vol. VIII,
No. 5, pp. 263-471, plates XL-LXXXIV.) Honolulu, Hawaii.
1923.

Ralph Linton's contribution to Polynesian study is the fifth publication resulting from the Bayard Dominick Polynesian Expedition and is devoted to a survey of the Material Culture and Archaeology of the Marquesas group. A recent renaissance of scientific interest in Polynesia renders any exposition of new data from that field especially welcome.

Linton's paper observes an elaborate care for details, such as methods of house and boat sennit lashings, house descriptions, boat descriptions, wood carving, tools and their uses, that is most commendable. The chapter on stone artifacts shows basic knowledge and careful application. It is noted with pleasure that close attention is given to artistic design units and motifs.

A series of comparative tables of Polynesian material culture traits are well conceived and probably as perfectly executed as incomplete and too often inaccurate data would permit.

In his final conclusions Linton outlines a theory to account for the derivation of all the historic Polynesian cultures from three original cultures which were respectively introduced by three different races of people. The three different types of culture referred to are classified as Indonesian, Caucasian-Negroid, and Indonesian-Caucasian-Negroid. These names are indicative of the people who are assigned throughout the exposition of the theory to act as culture bearing immigrants.

The routes and time relations which are involved in following these migrations are sufficiently intricate to demand as a foundation a large quantity of the most carefully collected data covering Micronesia and Melanesia as well as Polynesia. A hypothetical Negroid population is assigned to Western and Southeastern Polynesia as a primary source of culture in these provinces. This culture is overthrown by an invading Caucasian race which mixes with the blacks to produce a Caucasian-Negroid culture. This mixed culture is carried by the mixed stock to the Marquesas and to Easter Island. There follows an Indonesian wave coming through Micronesia. This race floods Western Polynesia driving out the majority of the former inhabitants and setting up a new culture. This Indonesian culture, with slight modifications, is eventually carried by immigrants to Hawaii, New Zealand and Southeastern Polynesia. There follows a period of quiescence. Finally immigrants from Western Polynesia in a new series of culture-laden invasions reach the Society group, rediscover Hawaii, destroy or modify the earlier culture of Southeastern Polynesia, drive some of the Southeastern Polynesians to New Zealand and others to the Marquesas, and overrun the Southern Marquesan group only to be blocked in their advance by the inhabitants of the Northern Marquesan group. Thus every important Polynesian cultural trait is definitely linked with a peculiar racial element which is credited with personally introducing that trait into every province where it is found.

The theory is intensely interesting to any student of Polynesia, but it cries aloud for supporting data. The data referred to by Linton include his own and Handy's Marquesan notes, his own studies of materials deposited in several American museums, the very limited number of truly scientific contributions which are available covering the history and general anthropology of Oceania, and the rather doubtfully accurate accounts of travelers and missionaries.

The chief argument in Linton's exposition is founded upon an apparent difference between a central Polynesian culture, with Western Polynesia as its stronghold, and a marginal culture, less uniform than the central type but with basic elements apparent throughout, occurring in Polynesia outside of the Western province. The similarities between the material culture of the Marquesas, New Zealand and Hawaii are especially stressed. Any lack of similarity is accounted for by second or third invasions at the hands of new culture-bearing stocks. Throughout the argument cultures are persistently associated with races and cultural changes of any moment are directly ascribed to large immigrations of racial units acting as culture bearers.

Much might be said questioning the structure of the argument in detail. Probabilities founded upon rather meager data constitute too large and important an element in the chain of reasoning submitted. Cultural differences which are at conflict with the trend of the argument are minimized or explained away by hypotheses that smack of rationalization. Thus Hawaii is classified with the Marquesas and New Zealand on the strength of similarities in material culture, but the socio-political similarities of Hawaii and Western Polynesia are accounted for by a final invasion of Hawaii at the hands of Western Polynesians coming via the Society group. Again, the difference between the Marquesan-New Zealand cultures on the one hand and the Southeastern Polynesian cultures, from which they both are credited to have sprung, on the other hand is explained by a late invasion of Southeastern Polynesia by Western culture bearers who succeeded in practically annihilating the preceding Southeastern culture. Is it not fair to ask for the evidence that such a hypothetical Southeastern culture ever existed? Could not the few basic similarities be more easily explained partly by general culture sources common to all and partly by diffusion?

In any group classification of cultures the likeness of cultures within a given group is subject to exaggerated interpretation. Even when the author clearly realizes these differences his exposition of similarities is apt to unintentionally make such differences non-apparent. Linton's division of Polynesia into central and marginal culture areas seems basically sound, but accompanying inferences that house types, boat types, political and other traits are fundamentally alike throughout the central group are not supported by facts. In the writer's opinion the similarity between Tongan and Southeastern Polynesian houses is much more marked than that

between Tongan and archaic Samoan houses. (The right to group Southeastern Polynesian houses as a unit type may be questioned, due to pronounced differences within the group, but the liberty is taken because of the equally pronounced differences between house types in Tonga, in Fiji, in Samoa and elsewhere. One grouping may be made as fairly as another.) This very discrepancy is used by Linton as an argument that an invasion from the west greatly modified the Southeastern culture after the Southeast had exerted its influence over the Marquesas. But such an argument patently travels in a circle. Any peculiar similarity between Samoan and Tongan boats is probably due on the one hand to interdiffusion between the two neighboring groups and on the other hand to rather recent Fijian influence. As to political traits, Tonga was centralized in its government to an extraordinary degree while Samoa was politically divided into small independent chieftancies characteristic of most Polynesian provinces. Any tendencies to the contrary were historically due to Tongan and European influences. Other striking dissimilarities might be cited if space permitted.

There is no evidence in Tonga to support the theory that Western Polynesia was originally inhabited by a Negroid race. Archaeological data furnish no trace of the Negroid. Tradition and mythology are free from the remotest implication of such a stock. Material and social cultures have Melanesian aspects but none that diffusion could not account for. The Negroid traits which a physical study discloses are still actively formative due to Fijian contact and necessitate no Negroid ancestor hypothesis. Samoa is equally free from evidence of an original Negroid stock.

Time and space make it necessary to pass on to what I consider the chief error in Linton's entire conclusive theory, namely the persistent tendency to couple cultures with races. The importance of diffusion is minimized to an astounding degree and the possibility of a culture becoming the culture of a race entirely foreign to that of its origin is given absolutely no consideration. The existence of Melanesian culture traits, for instance, in any province is used as an argument for consanguineous connections. The cultural similarities between any two provinces is offered in support of the conclusion that originally blood relationship existed. Thus:

"The historic Samoan-Tongan culture shows a tendency toward centralized government and it seems probable that the distinctive features of the Society Island culture originated in the Society

Islands as a result of the contact of immigrants from Western Polynesia with a subject population”

“This type [Caucasic-Negroid] survived into historic times in the Marquesas and New Zealand but had been greatly modified in the Society Islands by immigrants with a culture of Western Polynesian type”

“A third culture, associated with populations of mixed Indonesian and Caucasian type, with a negroid admixture, formerly existed in Hawaii and the Marquesas, but had been modified or displaced in the Marquesas by immigrants with a culture of Southeastern Polynesian type”

“Two of the cultural types are, therefore, linked with mixed populations and have either been introduced into Polynesia by mixed groups of immigrants or have been developed from the fusion in Polynesia of races dissimilar in physical type and probably in culture”

“The Southeastern Polynesian type of culture probably originated in Central and Southeastern Polynesia through the fusion in that region of an early negroid population with immigrants of the Caucasian race”

“It seems probable, therefore, that it [Hawaiian culture] is a blend between a culture of Western Polynesian type and the culture of the Caucasian immigrants who mixed with negroids to produce the Southeastern Polynesian culture.”

Any argument that treats culture and race together as a necessary unit is subject to attack. There is available a large quantity of data, collected from all parts of the world, which clearly show how cultural traits have persistently crossed racial boundary lines, even when the receiving stock has been most conservative in its natural attitude toward cultural innovations. Linton admits that the Polynesians are not conservative, but rather were quick to adopt new cultural elements that came to their attention. And yet his only conclusion from this native attitude is that “it would have been possible for an immigrant group, too small to materially affect the physical type of an inhabited island, to profoundly modify its culture. . . . Castaways were usually well received and although they could hardly have brought about any major changes in culture, they may very well have introduced single features, such as folk tales, superior mechanical appliances, or new forms of ornaments” (p. 448).

The possibility of diffusion working without small immigrating groups, or at least castaways acting as agents, is not even considered.

An example selected from Western Polynesia will serve to illustrate the sort of diffusion that the Linton theory ignores. The historic Fijians very seldom made a sea voyage of sufficient length to carry them as far as Tonga. The historic Samoans were also poor navigators. On the other hand the historic Tongans were bold adventurous navigators and made many trading trips not only to Fiji and Samoa but to more distant groups. In the eighteenth century the Tongans, without Fijian encouragement, adopted the Fijian type of sailing vessel called *ndrua*, realizing it to be a superior craft to the Tongan *tongiaki*. This was done without invasion, without Fijian settlement in any part of Tonga, without the Fijians acting as direct agents in any way whatever. The Tongans perfected the newly adopted boat and in one generation the 'Tongan *tongiaki* had become extinct. The Tongans, not the Fijians, introduced the Fijian boat into Samoa, where it took cultural root with no Fijian agents involved in any way, without the necessity of any manner of Fijian contact with Samoa. Western Polynesia bears rich evidence of a great many instances of similar diffusion of important cultural traits.

A fair consideration of cultural diffusion would tend to remove any necessity for the long series of immigrations of distinct racial units bearing respectively distinct culture traits which comprises Linton's theory of cultural distribution in Polynesia. If there be any strong evidence of such waves of racial immigration in Polynesia, well and good; but if the evidence is largely lacking or doubtful both as to authenticity and implication, as Linton partially admits in his final paragraphs (p. 447, 467), it seems unwise to forge links that are possibly unrelated into a chain of reasoning directed to explain a situation already largely accounted for by common original sources and widespread diffusion.

Linton's theory is ingenious and courageous and deserves serious attention. My chief adverse criticism is a plea for supporting evidence and for a broader consideration of all possible sources of cultural distribution rather than one specific source. We are grateful to Linton for the fine compilation of new data supplied and for the awakened interest in Polynesian problems which such contributions are sure to arouse.

W. C. MCKERN

The Native Culture in the Marquesas. E. S. CRAIGHILL HANDY.
Bernice P. Bishop Museum Bulletin 9 (Bayard Dominick Expedition
Publication number 9), Honolulu, Hawaii, 1923, 358 pp. 8 pls.

Three hundred and fifty-eight octavo pages jammed full of facts concerning the native culture of the Marquesas Islands await the reader of Dr. Handy's admirable treatise. He has refrained from indulging in speculation, except insofar as piecing out fragmentary data are concerned.

Upon the basis of genealogies the arrival of early settlers in the Marquesas is placed (15) in the tenth century. This date coincides quite closely with that established genealogically for the legendary founding of the Tongan dynasty of the Tui Tonga and perhaps marks a time of Polynesian expansion.

Two centers of culture in the Marquesas are attributed respectively to the original immigrants and "to immigration subsequent to the original settlement," rather than to local development. In fact, the author states (19) that "evidence from various sources leads me to conclude that after this original settlement of the group there was a subsequent immigration of another people" This situation is duplicated in western Polynesia, where, in the case of Tonga, there are traditional accounts of the settlement of people from Fiji, Rotuma, and Samoa, coupled with hazy mention of people from the sky, the mythical island of Puluotu, and the Underworld.

Material culture is treated by Dr. Handy rather from its social aspect than purely as material culture, for this phase of Marquesan civilization is handled by Mr. Ralph Linton in his "The Material Culture of the Marquesas Islands" (Bishop Museum Memoirs, VIII, no. 5, 1923).

There is much about the Marquesan culture that is evidently generically Polynesian. In speaking of dual political divisions Handy could well have added (25) Tonga to his list of groups where these occur. Handy's petty tribes, however, each autonomous and inhabiting its own mountain-hemmed valley, has no parallel in low-lying Tonga where topography is the ally of centralized power.

Marquesan society displayed the usual Polynesian differentiation into chiefs, priests, war leaders, artisans, and common people, but "there were no firmly or definitely established social classes" (36). Here again the parallel with western Polynesia is obvious.

Within the family that superiority of sisters over brothers which prevails in western Polynesia is lacking in the Marquesas; nor does

there seem to be any brother-sister tabu. The institution of *vasu*, whereby a man's sister's child may help himself to his uncle's property, is in western Polynesia and Fiji linked with the superiority of the sister over the brother and with the dominance of the family by the father's sister. All of this is lacking in the Marquesas. There is to be sure a definite and peculiar relation between the man's sister's child and the mother's brother, but the same relation holds between a woman's brother's child and the father's sister. In fact, a single term *pahupahu* (68) includes the mother's brother and the father's sister in the Marquesas. They reciprocate with the term *i'amutu* (cf. Tongan *ilamutu*, man's sister's child). Thus the western Polynesian inferiority of the mother's brother and superiority of the father's sister in relation to the nephew or niece is replaced by equality in the Marquesas.

Handy's description (39) of the *ka'ioi*, males and females who have passed the puberty stage but have not yet settled down to raising families and who lead licentious lives, would seem to indicate that they may represent an incipient stage of the definitely organized *arioi* institution of Tahiti.

Although the author is at pains to point out that wealth and social prestige first and birth second were the important factors in chieftainship (46, 53), as one reads the paper he gains the impression that birth is after all the primary factor as elsewhere in Polynesia. Moreover, the fact that all the tribal land and indeed all the structures and sites that might be called public or civic (59) were definitely regarded as the private property of the chief makes it clear that he was far more than a man of wealth and social prestige. As elsewhere in Polynesia he was preeminent as the representative of the tribal ancestor. One feels almost inclined to reverse the author's formulation of the situation and say that the chief was wealthy because he was chief rather than that he was chief because he was wealthy.

As in western Polynesia, Handy found that chiefs and commoners came of the same stock, according to their own genealogies (45). Similarly absence of genuine, religious authority or function on the part of the chief (45) characterizes both the Marquesas and Tonga. The position is more strongly developed in the Marquesas than in the west. In fact, the first-born male supersedes his father as representative of the ancestral stock, a situation that has a parallel in Tahiti.

The Marquesan *tuhuna*, assistants of the chief (55), were divided into administrative and industrial *tuhuna*, which virtually correspond with the Tongan *matapule* and *tufunga*.

Pages 85 to 91 are devoted to names and naming, but nothing is said about titles. Apparently the western Polynesian custom of each successive chief and assistant assuming the exact title or chiefly name of his predecessor upon succeeding to office is lacking. On the other hand exchange of names (89), as in Tahiti, is extensively practised, but is rare or wholly absent in Tonga and Samoa.

Mummification was extensively practised in the Marquesas which contrasts with its absence in Tonga and its rarity in Samoa. Special disposal of bones and the preservation of chief's skulls are also non-distinctive of western Polynesia.

In the Marquesas "*Me'ae* were fundamentally and originally places of sepulture, though they functioned also as places of public ceremonial. These two functions of the tomb-temples united as one, since all the ceremonial that was performed at the *me'ae* had to do with the bodies of priests or chiefs or with sacrifice to tribal deities—these priests and chiefs deified—or with some phase of the ancestral cult" (115). In Tonga and Samoa a *malae* (the western Polynesian form of the word *me'ae*) is a green, nowadays in a village, formerly in Tonga when there were no villages in front of a chief's establishment; in New Zealand it was an enclosed place in front of a house. Burial platforms (usually of stepped and truncated pyramidal form) of kings in Tonga are not called *malae*, but *langi*. It is an interesting problem as to which is the older use of the term *malae*, the eastern or western Polynesian. The stones slabs and blocks set up as back rests at the Marquesan *me'ae* (119, 240) have their analogues at the Tongan *langi* or terraced stone tombs.

Storage of breadfruit in dug pits or silos was practised on a much grander scale than in western Polynesia. Frequent wars and droughts were evidently two incentives. One of the Marquesan breadfruit pits is described as fifteen to twenty feet in diameter and at least thirty feet deep (189). Breadfruit was far more important as a food in the Marquesas than in Tonga, where yams were the principal staple.

"The drinking of kava was common in the Marquesas as in other parts of Polynesia" (202), but curiously enough there was no formality connected with it, the elaborate ceremonial of western Polynesia being lacking.

The extensive cannibalism and system of human sacrifice of the Marquesas has but little to parallel it in Tonga and Samoa.

The tribal inspirational priest of the Marquesas is denoted as *tau'a*, the term cognate with Samoan, Tongan, and Niuean *taula*, anchor.

In the west, at least, the metaphor is carried further, for not only is the priest the "anchor of the god," but the animal in which the god becomes incarnate is the *vaka*, "vessel of the god." However, Handy mentions no such sacred animals for the Marquesas (262). It is possible that the inspirational priest represents a very ancient and widespread cultural trait and that the concept of the animal in which the god becomes incarnate is more recent. The resemblance of the Polynesian inspirational priest to the Turkic shaman is obvious.

In western Polynesia Tangaloa is the sky god while in the Marquesas, according to Handy, he is the god of the sea and wind and the patron of occupations. In Tonga there are five deities named Tangaloa who have their abode in the sky. One of them becomes incarnate in the snipe and in that form visits earth. The three Marquesan sky gods, one of whom is represented as a bird (246), would appear to be the analogues of the western Polynesian Tangaloa. Whether the eastern Polynesian attribution of the original home of Tangaloa to the sea or the western attribution to the sky is the earlier is not clear.

Marquesan concepts as to ghosts of the dead and of the living (249) closely resemble Tongan ideas as do also their ideas concerning evil spirits (254). Prominent among these latter in the Marquesas are cannibal ogresses (257), who today in Tonga also have a certain hold on the popular imagination of the inhabitants of islands on which they are supposed to reside.

The Marquesan conception of Hawaii or Havaiki as the underworld, or as the land or region where men and gods lived in ancient times, contrasts with western Polynesian ideas concerning Havaiki where it is conceived of neither as the underworld nor as a mythical place, but simply as the island of Savaii, Samoa. So far as I know Havaiki does not enter into western Polynesian mythology and it certainly does not represent any ancient homeland. Can it be that the absence of the Havaiki homeland idea among the Tongans and Samoans is due to the fact that the real Havaiki was Savaii and was therefore too familiar to them to become a legendary homeland, while to the distant Marquesans and Maori Havaiki passed from the realm of the real to the realm of the imaginary?

The Marquesan use of knotted cords as a mnemonic device (342) in keeping genealogies is strongly reminiscent of the Peruvian kipu and appears to raise again the knotty problem of diffusion versus independent invention. However, a mnemonic device in the form of a carved stick is similarly used by the Maori. But it would be hazardous to conclude that such excellent wood carvers as the Marquesans deliberately substituted a kipu-like device of string for a carved wood one, if they were already acquainted with the latter.

A Marquesan genealogy (343) given by Handy is more than three times as lengthy as the longest Tongan one, totaling over 140 generations. Undoubtedly the genealogical complex is more highly developed in eastern and southern, than in western Polynesia.

The reader cannot fail to be impressed with the magnitude of Dr. Handy's work when it is realized that the materials for this and forthcoming papers were obtained during but nine months' residence in the Marquesas. It offers a good example of the anthropological data that can still be unearthed in Oceania, both from native informants and from manuscript sources.

E. W. GIFFORD

The Maori Mantle. H. LING ROTH. Bankfield Museum, Halifax, England, 1923. 123 pages.

Most of the literature on Polynesia is so vague and diffuse that it is a pleasure to encounter a book like the present one in which a single phase of the culture of one Polynesian group has been treated thoroughly and in workman-like fashion. The opening chapter is devoted to quotations from the works of early visitors to New Zealand and to a résumé of the previously published descriptions of Maori mantle making. The industry is then taken up systematically and the processes described in order, beginning with the cultivation and preparation of the *Phormium* fibre. The mantles are divided into four classes:—I. Mantles with wedge shaped inserts, probably twined perpendicularly. II. Mantles with elliptical inserts, twined horizontally. III. Capes and kilts with a thick top border plait as foundation. IV. Skin mantles. Within the second class the author distinguishes three subclasses; twined garments, usually covered with tags, closely twined cloth-like garments, usually covered with strips of hide, and coarsely twined garments such as rain cloaks. Each of these types is described and illustrated and additional chapters are devoted to feather mantles and to the *tankio* or border applied to

the finer garments. The various techniques used in mantle making are illustrated by numerous drawings.

The last sixty-six pages are given over to a description of individual mantles now in British museums and to tables of measurements. A number of non-Maori specimens are described and illustrated, eight pieces from the Northwest Coast, all of considerable age, being of especial interest to American students.

Examples of twining from many parts of the world are figured for comparison with the Maori specimens, and a separate chapter is given over to twined garments from northwestern America. A tabulated comparison of these with the Maori garments reveals few similarities and the author concludes:

"The coincidences between the two peoples are due to the adoption by both of the principles of twining which with the methods of overlapping and bifurcating is natural to basketry, matwork and stringwork nearly all over the world. . . . I think we are justified in considering that the Maories and Americans have founded the making of garments on a pre-existing knowledge of twined work being possibly pushed thereto by the rigors of their respective climates. Both peoples may possibly have had some stimulus, or derived some knowledge, from the west but so far there is no evidence from elsewhere of a well developed twined work garment similar to those they have produced and in default of further evidence we may for the present consider these garments to have developed independently both in N. W. America and in New Zealand."

In view of the broad field from which the author has drawn his comparative material it seems unfortunate that he should have ignored, except for a single brief reference, the highly developed twined fabrics of the Indians of the Mississippi Valley. A bibliography would also have increased the value of the work.

R. LINTON

Tongan Myths and Tales. Compiled by EDWARD WINSLOW GIFFORD. Bernice P. Bishop Museum Bulletin 8 (Bayard Dominick Expedition Publication No. 8). Honolulu, Hawaii, 1924. 207 pp.

Tongan Myths and Tales, which was published in Honolulu by the Bernice P. Bishop Museum, is one of the valuable series of papers being produced by the Bayard Dominick Expeditions to various parts of Polynesia. These tales, which are but a part of the fruit of Mr. Gifford's nine months' work in the Tongan Group in the years

1920-1921, afford ample evidence of what may yet be accomplished, even in a short time, by patient and skilful industry, systematically and scientifically applied, in an area which might, at first sight, appear to have been almost completely denuded of its native culture.

The work is an important contribution to the collection, gradually being formed, which will perhaps enable investigators of the future to map with certainty the main lines of human movement in the Pacific during the last thousand years, and doubtless throw many illuminating beams back into earlier centuries, and into Asia and Europe.

Mr. Gifford briefly discusses the relation of Tongan mythology to the mythologies of the remainder of Polynesia, and to those of Indonesia, Micronesia, Melanesia and Australia, and, with the caution made necessary by the paucity of material, indicates that the affinities are in the order named. The comparative study of these mythologies offers a wide field of research, necessitating an analysis which will indicate as clearly as may be the portions of the legendary inheritance which are the possession of Polynesian linguistic or ethnic pools in the north-western groups before they can yield safe tests of affinity between the different peoples.

Mr. Gifford's conclusion that Samoa, and not Fiji, lay in the line of march to their present home, has high probability as applied to the latest migration into Tonga of the present dominant inhabitants of the Group, probably the Tonga-Viti folk of other writers, though there is evidence that this irruption of the Tonga-Viti folk, probably about a thousand years ago, was not into uninhabited lands, and was probably into lands occupied by earlier Polynesian immigrants. The elucidation of this point must await the publication of sufficient Fijian, especially Eastern Fijian, material. Mr. A. M. Hocart has already indicated his view that Fiji was inhabited by Polynesians, who were driven eastwards by invading Melanesians, in comparatively recent times. (A. M. Hocart, *Early Fijians*, *Journal of the Royal Anthropological Institute*, Vol. XLIX, 1919). In the view of the present writer Tonga, a large part of Fiji, and neighboring islands, inhabited at an early period by Polynesians, were invaded by way of Samoa by their kinsmen, the Tonga-Viti folk. This irruption would be long anterior to the Melanesian invasion spoken of by Hocart. Solution of the problem is complicated by later intercourse, which has, amongst other results, doubtless left a deep mark on place-names, old names being displaced by new. Mr. Gifford has dealt

more fully with Tongan place-names in another paper (Tongan Place Names, Bayard Dominick Expedition, Publication Number 7, Bernice P. Bishop Museum Bulletin 6), but in the paper under review has briefly noticed the fact that comparison of names within the Tongan Group shows closer affinity of Tongatabu with Haapai and Vavau respectively, than these two latter groups have with each other.

By a self-imposed self-denying ordinance, Mr. Gifford has refrained from publishing in full certain tales which have already appeared elsewhere. Although he has indicated clearly in his footnotes where these translations are to be found, yet, as this is, and probably will continue to be, the authoritative collection of Tongan legendary lore, it would have been better perhaps to have included all available material. This would have drawn attention to a point of some importance in the account of the creation of man, viz., the connection of that event with the sky god, or gods, Tangaloa.

The matter of the tales is very varied—cosmogony, Maui, kings and chiefs, gods, geographical and heavenly features, demi-gods and heroes, and much beside. The compiler has arranged the tales under headings, which preserve, as far as possible, logical sequence, and ensure facility of reference. The largest single section is that devoted to the Tui Tonga, the Sacred Kings, sprung from Eitumatupua and Ahoeitu, the significance of whose names has been pointed out by Hocart (*Chieftainship and the Sister's Son in the Pacific*, *American Anthropologist*, N. S., vol. 17, No. 4, 1915). The Tui Tonga both ruled and reigned in Tonga for many generations, and then reigned only till their final extinction in 1865 by the Tui Kanokupolu, Taufaa-hau, King George Tupou I.

In Tonga, as elsewhere, floating tales attach themselves to well-known names. This must be borne in mind in endeavoring to interpret the tales relating to Hina, probably a moon-goddess, associated also with the sea. Hina has passed into proverb in Tonga as a name to which stories of beautiful girls tend to become attached. Similarly Sinilau, often associated with Hina, frequently as her lover, attracts to himself stories of handsome men, or perhaps it would be truer to say that whenever the heroine of a story becomes Hina there is a tendency for the hero to become Sinilau. Similarity of name and function of the Polynesian Hina (Sina) to the Semitic-Akkadian Sin suggests the possibility of identity of origin.

Great interest attaches to the stories of Puluotu, land of gods and departed spirits of the noble, usually a land overseas, away apparently to the north or north-west, but sometimes the Underworld. The overseas Puluotu I assume to belong to the latest immigration. The significance of the underworld Puluotu might be made clearer by careful ascertainment of the positions of all sites known as the Road to Puluotu (*Hala-ki-Puluotu*).

Apart from the value of the tales for the light they throw on origins and migrations, they are of great social and psychological interest, presenting, as they do, a people's account of themselves, a literary record from the inside of their outlook on life and society, presenting pictures of themselves at work and at play, at war, voyaging, fishing, leading their daily lives.

There are some few tales which show marks of European influence, and the compiler remarks that during his investigations he recorded other obviously foreign and hybrid stories. Although these have been rightly excluded from the present collection, even they are not without value, as showing the kind and extent of spontaneous variation in tales during a period of time whose approximate duration can be easily reckoned. Laboratory experiments to measure such change, no less important to the student of religion than to the folklorist, were described some years ago in *Folk-Lore* (England). Mr. Gifford, by publishing variants of several of the tales, has furnished some data for such investigation.

Tongan texts of the poems, and of many of the tales, in this collection have been printed with parallel English translations. The quality of the translations varies. Mr. Gifford, who had only nine months in the Group, wisely decided at the outset that it was better to employ translators than to devote his severely limited time to learning the Tongan language. On the whole he has been well served by his translators, but caution must be exercised in accepting the English, especially in the poems, as a literal rendering of its Tongan vis-a-vis. As an example of mistranslation, not, however, very important as regards general meaning, may be cited, in the first paragraph on p. 136, *Pea nau tuutope o fesi fohe pe ki uta*, rendered, "And stood and paddled and in the hurry broke the oar." *Tuutope*, "with the *tope*, a long lock of hair, standing," i.e., blown back by the wind, is simply a proverbial expression meaning "to hasten." Similarly *fesi fohe*, which is, literally, "break," or "crack," "oar," is also an expression meaning "to hasten." The clause, therefore, contains

no reference either to standing up or to the literal breaking of oars, but should be rendered, "And they made all speed to shore."

The last line of the poem on p. 148 reads, *Kae kehe ko Kae ke tuli sino*, rendered, "While Kae is seeking a body." This is possible as a literal translation, but is too doubtful to admit of its being used, for example, as illustrating any theory of death. The phrase means, "The main thing, anyhow, Kae must be punished." *Tuli sino*, translated as "seeking a body," is an expression meaning "be punished," and the word *tuli*, rendered "seeking," quite possibly means "numbed," i.e. with the effect of blows.

That mistranslations of which these errors are typical should occur is no matter for surprise. The older poems abound in words and expressions which are unintelligible to the majority of present-day Tongans. It has not infrequently been my own experience to fail, after repeated inquiries, to get the meaning of an obsolete word, or little-known phrase. Although it is necessary to enter this caveat against accepting the English as, in all cases, a literal translation of the Tongan, the main purpose of the collection, in preserving a number of valuable Tongan texts, and presenting English versions of many Tongan tales, has been achieved, and the compiler is to be congratulated on the judiciousness and skill with which he has performed his task.

E. E. V. COLLOCOTT

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ANTHROPOLOGY AT THE TORONTO MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, 1924

The ninety-fourth annual meeting of the British Association for the Advancement of Science was held in Toronto from August 7th to August 13th, 1924. The meetings of Section H (Anthropology) were held in the Anatomy Building of the University of Toronto and were very well attended. Among the British anthropologists present were Ashby, Balfour, Buxton, Fallaize, Miss Fleming, Haddon, Low, Peake, Rose, and Shrubsall; American anthropologists included Goldenweiser, Gregory, Hrdlicka, Laughlin, Miss Mead, Oetteking, Mrs. Spier, Todd, and Wallis; while Canada was represented by Ami, Barbeau, Currelly, Hill-Tout, Jenness, McIlwraith, Rhoades, Sapir, and Wintemberg.

The papers read were:

- A. C. Haddon: *A Suggested Arrangement of the Races of Man*
- C. Hill-Tout: *New Trends in Anthropology*
- F. C. Shrubsall: Presidential Address on *Health and Physique through the Centuries*
- T. W. Todd: *The Relation of Industry and Social Conditions to Cranial Types in Cleveland*
- T. Ashby: *Recent Discoveries in Italy*
- T. Ashby: *The Roman Road System as a Means for the Spread of Roman Military Power, Trade, and Civilization*
- H. Balfour: *The Art of Stencilling in the Fiji Islands and the Question of its Origin*
- A. Goldenweiser: *The Historical School of Ethnology in America*
- W. D. Wallis: *Diffusion as a Criterion of Age*
- H. J. Rose: *The Bride of Hades*
- Mrs. E. G. Spier: *An Analysis of the Ceremony of the First Salmon on the Pacific Coast*
- W. J. Wintemberg: *A Tentative Characterisation of Iroquoian Cultures in Ontario and Quebec, as determined from Archaeological Remains*
- G. E. Rhoades: *Composition in the Art of the North-West Coast Indians*
- H. M. Ami: *Recent Discoveries in Prehistory*
- A. Hrdlicka: *The Antiquity of Man in America in the Light of Recent Discoveries*

- B. Oettinger: *The Santa Barbara Skeletal Remains*
 W. K. Gregory and M. Hellman: *The Dentition of Dryopithecus and the Origin of Man*
 L. H. D. Buxton: *Skulls from the Valley of Mexico*
 C. G. Seligman: *A Pseudo-Mongolian Type in Central Africa*
 Dr. Laughlin: *Some of the Racial Characteristics emerging from America's Study of her Immigrants*
 D. Jenness: *The Ancient Education of a Carrier Indian*
 T. F. McIlwraith: *Some Aspects of the Pollatch in Bella Coola*
 E. Sapir: *The Privilege Concept among the Nootka Indians*
 C. M. Barbeau: *The Crests of a Tsimshian Family: a Study in Native Heraldry*
 H. Balfour: *The Welfare of Primitive Peoples*
 A. Low: *The Processes of Growth in Infants*
 Miss R. M. Fleming: *The Influence on Growth of some Race and Sex Characters*
 L. H. D. Buxton: *Physical Observations on Navajo Children*
 Miss M. Mead: *Rank in Polynesia*

Papers read by title were:

- C. Wissler: *The Segregation of Racial Characters in a Population*
 Mrs. R. F. Benedict: *Religious Complexes of the North American Indian*
 W. K. Moorehead: *The Red Paint People of Maine*
 H. I. Smith: *Trephined Aboriginal Skulls from British Columbia and Washington*
 F. G. Speck: *Some Tribal Boundaries of the Montagnais and Naskapi of the Labrador Peninsula*
 Mrs. Z. Nuttall: *Recent Archaeological Discoveries in the Valley of Mexico*
 Miss I. Gordon: *Cultural Stability among the Mountain Whites of Tennessee*
 G. E. Laidlaw: *Some Ojibwa Nature Stories*

On the afternoon of August 11th Section H held a joint meeting with Section J (Psychology) for a discussion on "Racial Mental Differences." The discussion was introduced by W. McDougall, the psychologist. Others who took part were C. S. Myers, A. Goldenweiser, F. C. Shrubsall, W. D. Wallis, H. J. E. Peake, and E. Sapir; abstracts were also read of the views of C. Wissler and J. R. Swanton. The opinions expressed by the various psychologists and anthropologists were strikingly diverse.

Dr. Marsh, the discoverer of the "White Indians" of Darien, addressed a number of the anthropologists on the subject of his travels; at the end of the meeting he presented his case at a public session. Drs. Haddon and Shrubbsall and Mr. Buxton, who saw the three "White Indian" children near Prescott, Ont., were of the opinion that they might fairly be considered as coming within the range of the term "albino." Dr. Christie, the pathologist, dissented from this view and seemed inclined to explain the whiteness of the skin as a progressive pathological condition.

Special features of interest to the members of the Section were a visit to the Royal Ontario Museum, where Mr. Currelly showed them the splendid Chinese collections installed under his care; and a series of three selected Canadian Indian exhibits, illustrating art, copper, and pottery, which had been sent down from the National Museum at Ottawa. The exchanges, both scientific and personal, between the British, American, and Canadian anthropologists were cordial and stimulating. It seemed to be the general consensus of opinion that the sectional meeting was a decided success.

E. SAPIR

ANTHROPOLOGICAL NOTES

GEORGE HUBBARD PEPPER

IN THE PASSING OF George Hubbard Pepper at Roosevelt Hospital, New York City, in the morning of May 13, the Museum [Museum of the American Indian, Heye Foundation] has suffered the loss of one who had been longer associated with the Director in his endeavors to bring together the collections that formed the nucleus of the Museum than any member of its scientific staff, while to the Director himself Mr. Pepper's death is not alone that of an associate but of a staunch and gentle friend.

Mr. Pepper was born at Tottenville, Staten Island, February 2, 1873, and from boyhood evinced a keen interest in American archaeology, inspired by the presence of sites of Indian occupancy in the immediate neighborhood of his parental home. After his graduation from the local high school in 1895, he was encouraged by the late Prof. F. W. Putnam to undertake special studies at the Peabody Museum of Harvard University, remaining in Cambridge for that purpose during the winter of 1895-96. In 1896 he was appointed assistant curator of the Department of the Southwest in the American Museum of Natural History, from which time until 1900, during the summer months, he was in immediate charge of the excavation of the prehistoric ruin of Pueblo Bonito in Chaco cañon, New Mexico, conducted under the Hyde Exploring Expedition, the results of his observations in that interesting field being published in 1920 by the American Museum.

In pursuance of his ethnological studies, Mr. Pepper made a reconnaissance of all the occupied pueblos of the Southwest, in 1904, at the same time continuing a study of the technique of Navaho weaving, commenced while he was engaged in the Pueblo Bonito exploration. Retaining his position in the American Museum, Mr. Pepper later in the same year continued excavations in the *yacatas* of the Tierra Caliente of Michoacan, Mexico, in the interest of what had become known as the Heye Museum, and in 1907 he accompanied Prof. M. H. Saville, of Columbia University, on an expedition for the same Museum, whose object was the elucidation of certain archaeological problems in the Province of Manabi, Ecuador.

In 1909 Mr. Pepper severed his connections with the American Museum and was appointed assistant curator in the Department of American Archaeology in the University Museum at Philadelphia, a position which he retained until the following year, when he became permanently attached to the corps of workers which the writer had enlisted for building the collection that developed into the Museum of the American Indian, Heye Foundation.

Mr. Pepper devoted his entire service to the interests of this institution until the end. In 1914, in conjunction with the Director he excavated a Munsee cemetery of the historic period near Montague, New Jersey, the results of which have been published by the Museum. In the following year he was associated with the Director and Mr. Hodge in the exploration of the Nacoochee mound in the old Cherokee region in Georgia, the results of which have been likewise published by the Museum. In 1918 he returned to the Pueblo field in New Mexico to aid in the Hawikuh investigations of the Hendricks-Hodge Expedition of the Museum. In all of his field work Mr. Pepper exhibited punctilious care and ability, and his notes were always models of detail and completeness.

During the last few years, as other duties permitted, Mr. Pepper devoted much attention to the elaboration of his studies of Navaho weaving, commenced many years before, the basis of his research, to a considerable extent, being a collection of Navaho textiles which he had gathered from time to time, and which ultimately was acquired by the Museum. The results of these final studies is an extended memoir on the subject which will be published under the imprint of the Museum.

Mr. Pepper was a founder of the American Anthropological Association, a fellow of the American Association for the Advancement of Science and of the American Ethnological Society of New York, a member of the American Folk-Lore Society and a corresponding member of the Academia Nacional de Historia of Ecuador. *Indian Notes*.

A complete bibliography of Mr. Pepper's works appears in *Indian Notes*, v. 1, no. 3, July 1924, pp. 108-110.

DR. A. E. JENKS, Chairman of the Division of Anthropology and Psychology, National Research Council, Washington, D. C., and professor of Anthropology, University of Minnesota, received the degree of Doctor of Science from Kalamazoo College, his *alma mater*

June 18th, at the time of delivering the Commencement address on the subject "The Dawning Era of Science."

DR. VILHJALMUR STEFANSSON has returned from his exploration of Central Australia and on August 15 sailed for the United States. *Science*.

MR. M. R. HARRINGTON AND MR. L. L. LOUD have spent the months of July and August excavating the rich cultural deposits of Nevada caves in the interest of the Museum of the American Indian, Heye Foundation.

MR. H. U. HALL, formerly Assistant Curator of the Section of General Ethnology at the University of Pennsylvania, is now Curator of that section. During the absence of Dr. Farrabee, whose illness continues, Mr. Hall has been appointed as Acting Curator of the American Section.

SURVEY OF NIHOA AND NECKER ISLANDS. During 1923 the Tanager Expedition, under the joint auspices of the United States Navy, the U. S. Biological Survey and the Bernice P. Bishop Museum, made a scientific survey of the chain of islands extending from Hawaii, 1,000 miles northwestward to Ocean Island. Somewhat unexpectedly ruins of ancient settlements were found on the islands of Nihoa and Necker. These two islands are eroded remnants of volcanic masses, cliff-bound and without water. On them a landing party made collections and maps, but had neither the time nor the facilities for an exhaustive study of the archaeological remains.

During July of the present year, the United States Navy again provided the *Tanager*, and with a selected navy personnel and a group of scientists from the Bishop Museum, under the direction of Professor Harold S. Palmer, the ship returned to Nihoa and Necker equipped for making topographic maps, sketches and photographs showing the location and character of the walls, house platforms, terraced fields and burial grounds. With considerable difficulty land camps were established and the surfaces of the islands cleared of brush, revealing ruins favorably placed for study.

As compiled by Kenneth P. Emory, ethnologist of the Bishop Museum staff, the Nihoa maps show fifty structures within an area of about 130 acres—house platforms, temple sites, garden terraces; the Necker maps show only ruins of places used for religious purposes. The collections from these islands include stone bowls, stone idols,

hammerstones, adzes, and other artifacts, and skeletal material from burial caves. Although Nihoa Island is only 160 miles from Kauai, the stone structures and skeletons show forms not common to the inhabited islands of the Hawaiian Archipelago. *Science*.

A NEW JOURNAL OF PHYSICAL ANTHROPOLOGY. We have received Jahrang I. Heft I. of "Anthropologischer Anzeiger," a new journal devoted exclusively to Physical Anthropology. It is edited by Professor Rudolf Martin of Munich University. The journal contains a few small original articles but its primary aim is to list and review new international literature pertaining to Physical Anthropology. Four annual numbers, two of which are now out, are scheduled for the beginning. The subscription price is \$2.00 per year. Address the publisher, E. Schweizerbart'sche Verlagsbuchhandlung, Stuttgart.

A NEW ANTHROPOLOGICAL JOURNAL made its appearance on July 2, 1924. It is the Ceylon Journal of Science, Section G. Archaeology, Ethnology, etc. Volume 1, part 1 (forty-two pages), has been published under the editorship of A. M. Hocart, Archaeological Commissioner of Ceylon. The journal is octavo in size. It is obtainable from the Archaeological Commissioner, Anuradhapura, Ceylon, and from Dulau and Company, Limited, 34 Margaret Street, Cavendish Square, W. 1, London. The price of the first number is Rs. 2/50. Exchanges are solicited and should be addressed to the Archaeological Commissioner.

Three articles appear in the first number, all by Captain Hocart. The first is a summary of archaeological work recently completed and in progress in Ceylon. This is accompanied by six plates.

The second article is entitled "The Origin of the Stupa," and is accompanied by two plates. The author, among other things, shows the probable connection of the tope (stupa) of India with the mounds of Fiji.

The third article, "The Coronation Ceremony," is even more embracing in its scope and advances reasons for believing that the English coronation ceremony, the Indian ceremonies for the same purpose, and the Fijian and Polynesian installation of chiefs are all genetically related.

A NEW PUBLICATION. The Anthropological Institute of the Czech University of Prague has commenced to publish a new journal under the title of "*Anthropologie*" to be devoted exclusively to

Physical Anthropology. The publication will have the same broad basis as, and will in other points resemble, the *American Journal of Physical Anthropology*. It is edited by Professor Matiegka with a number of Associate Editors in the different Slavic countries. The Journal is to pay special attention to anthropological work among the Slavs, hoping to make it known to the rest of the world. The first number issued in March, 1923, printed on good paper, brings the following communications: The Aims and Needs of Anthropology with Special Regard to Czecho-Slovakia, by Aleš Hrdlička; Anthropological Studies of Musculature, by Dr. E. Loth; Peculiarities of the Venus Sulci of the Diluvial Crania of Předmost, by J. Matiegka; Bathrocephaly, by J. Hochsinger; Changes in the Population of Bohemia and Moravia during the Great War, by F. J. Netušil; Contributions to the Demography of the Huculi (Carpathians), by V. Suk; The Somatological Age, by J. Matiegka. In addition to these there are numerous reviews of literature and anthropological notes. A valuable feature of the Journal is that all the original communications are accompanied by a good abstract in French or English. Three additional numbers, equally as creditable have been received since.

Considering the usual difficulties with the otherwise rich Slavic literature in anthropology, this is a most welcome publication and one which will be quite indispensable to English workers in Physical Anthropology. The subscription price is 80 C S crowns (\$2.50) less than half that for which a similar journal could be furnished in this country. Address: "Anthropologie," Anthropological Institute, Prague II, 2027 Karlov 3, Czecho-Slovakia. *American Journal of Physical Anthropology*.

OWING to the unfavorable economic conditions to which European scholars are subjected at the present time, it was decided to hold the next Congress of Americanists in Italy, at the invitation of the Italian Government, and to decline with thanks the invitation kindly extended by the City of Philadelphia.

PAN AMERICAN SCIENTIFIC CONGRESS. The Third Pan American Scientific Congress will assemble at Lima, Peru, on Saturday, December 20, 1924, instead of November 16, the original date, and will adjourn on Tuesday, January 6, 1925. Those wishing to attend the conference should communicate with Sr. José J. Bravo, the Secretary General, Apartado 889, Lima, Peru.

A NEW INTERNATIONAL INSTITUTE. While Norwegians and Danes are disagreeing about their mutual rights in Greenland, scientists of both countries are planning to unite in the study of the civilization of the Arctic peoples, a field in which they both have unusual facilities for research. The New Institute for Comparative Research in Human Culture at Kristiania, whose president is Dr. Fredrik Stang, Rector of the University, is supported partly by the Norwegian State and the municipality of Kristiania, partly by the Danish Rask-Orsted Fund as established by a parliamentary grant. The plan is for the Institute to devote itself to pure research work, the scholars engaged there to be relieved from the necessity of teaching. As the domain of comparative human culture is so vast, the Institute will specialize in the field nearest at hand, beginning with the Arctic peoples and studying the civilization of the Lapps comparing with the investigations that have already been made by American explorers regarding the Eskimos. The Institute will also take up the study of the Caucasian languages and in connection with these the Iranian languages. Grants have also been made for the study of comparative folk-lore. It is planned to begin a series of lectures by Norwegian and foreign savants in Kristiania in September and October. *The American-Scandinavian Review*.

AT THE Institute for Comparative Research in Human Culture, Kristiania, Norway, the first series of lectures to be held in September and October will be as follows:

Meillet (Paris): "La méthode comparative en linguistique historique."

Otto Jespersen (Copenhagen): "Mennesket nation og individ i sproget."

Vinogradoff (London): "Rights and Customs."

Felix Krueger (Leipzig): "Religiöse Faktoren in den Frühformen der Kultur."

Schetelig (Bergen, Norway): "Nordisk Arkeologi."

Kaarle Khron (Helsingfors): Training Course in Folkloristic Method.

It is possible that still more lecturers will be invited. The lectures will be given at the Nobel Institute, Kristiania, a series of ten by each speaker. The Institute extends a cordial invitation to interested students and scientists of all nations—and the University of Kristiania will place all its facilities at the disposal of such visitors.

The Danish State Research Fund (The Rask-Ørsted Fund) has granted a sum of money as fellowships for Danish students who wish to attend the lectures at Kristiania this year. It is hoped that several other countries and higher institutions of research and learning will follow the example of the Danes in granting scholarships to delegates and individual students.

Inquiries concerning the above lectures or the Institute in general should be addressed to the secretary, Lektor I. A. Refsdal, St. Oglavs st. 26, Kristiania, Norway.

EXPEDITION OF THE BISHOP MUSEUM. The Bishop Museum will have at its disposal for the next two or three years the four-masted schooner *Kaimiloa* for research work in the South Seas. The boat will leave Honolulu on its first cruise about the middle of October. The first year's tentative schedule includes Malden, Starbuck, Tangareva, Rakahanga, Manihiki, Pukapuka and Manua Islands, and if conditions permit considerable time will be spent in the Tuamotus.

On the initial cruise, six members of the museum staff will constitute the scientific personnel: Stanley C. Ball, curator of collections; Kenneth P. Emory, ethnologist; Charles H. Edmondson, zoologist; Armstrong Sperry, assistant ethnologist and artist; Gerrit P. Wilder, associate in botany; and Mrs. Wilder, interpreter. The scientists will be guests of the owners of the *Kaimiloa*, Mr. and Mrs. Med R. Kellum, who will accompany the cruise on some of its expeditions. The personnel of the later trips has not yet been selected.

The museum plans to study the out-of-the-way islands of the Pacific, making botanical, zoological and geographical studies, but giving particular attention to an ethnological study of the natives. It is hoped that relations may be established between the museum and the residents of the islands which will pave the way for a broad scientific survey in the near future, and lead to the betterment of conditions under which the natives live.

The schooner has a length of 200 feet and a 38-foot beam. It has been remodelled to meet the needs of the scientists, and will carry a fully equipped laboratory, wireless apparatus, refrigerating plant, a library and spacious, comfortable living quarters. *Science*.

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